NEW-YORK FARMER,

AND AMERICAN GARDENER'S MAGAZINE.

VOL. VII.—No. 4.] PUBLISHED MONTHLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS A-YEAR, IN ADVANCE. [NEW SERIES—VOL. II.

D. K. MINOR, Proprietor.] FOR APRIL, 1834. [SAMUEL FLEET, Editor.

ORIGINAL COMMUNICATIONS.

Anniversary Proceedings of the New-York State Agricultural Society, at Albany, February 12, 1834.

It is with pleasure that we are enabled to lay before our readers the proceedings of the State Society. Great benefit has already resulted from the existence of the Society, both to this State and to the Union; and we fondly hope and fully believe, that the happy effects of its influence already experienced are but the prelude to those that shall be universally acknowledged as far greater and still more benign. We invite especial attention to the communication on draining, and that on the cultivation of corn with our remarks.

Jesse Buel, President, took the chair. When the society was organised, pursuant to the order of business prescribed by the last annual meeting of the society, and the delegates from the different county societies appeared and produced their credentials, new members were admitted, and the minutes of the preceding meeting were read and approved.

The Treasurer of the Society made the following report:

Three life subscribers, each $50 -	$150 00
Four members, each $5 - - - - -	20 00
Ninety-nine, each $1 - - - - - -	99 00
Eleven, 2d year, $2 each - - - -	22 00
One member, $4 - - - - - - - - -	4 00
One member, $3 - - - - - - - -	3 00
	$298 00

Payments as follows:

For mulberry seed - - - - -	$26 00	
Printed proceedings, &c.	1832, 109 75	
Do. do.	1833, 100 00	
Sundries - - - - - - - - - -	5 25	
		241 00
Balance in Treasury - - - - - - -		$57 00

Errors excepted.

Charles R. Webster.

Albany, February 12, 1834.

The President announced that he had received a communication from Dr. Hosack, which was read.

Mr. Hickock, of Rensselaer county, one of the Executive Committee, made a communication to the society, which was read.

On motion of Mr. Hickock, the following preamble and resolutions were agreed to, to wit:

Whereas a specimen number of an agricultural paper, entitled the Cultivator, has been recently issued in this city, in a form and on terms which promise great public usefulness, and the proprietorship of the same having been offered to this society: Therefore,

Resolved, That the offer be accepted, and that a committee of three be appointed to edit and manage the fiscal concerns of said paper, and that the said committee be required to report the receipts and expenditures of the said publication at the anniversary meetings of the society.

Resolved, That the members of the society, and all persons willing to aid in the diffusion of useful knowledge, be respectfully invited to aid in the circulation of the Cultivator.

On motion of Mr. Bronson, of Jefferson county,

Resolved, That Mr. Sudam, of Ulster, Mr. Haight, of Monroe, and Mr. Ruggles, of Lewis county, be a committee to prepare a petition to be presented to the Legislature, renewing the request for an appropriation for the establishment of an Agricultural school, and also for an appropriation of public moneys to be distributed to the several counties, to be awarded in agricultural premiums.

Resolved, That Mr. Bronson, Mr. Walsh, of Rensselaer, Mr. Haight, Mr. Elmendorf, of Ulster, and Mr. Taylor, of Saratoga, be a committee to recommend suitable persons for officers of the society for the current year, and that they also recommend suitable persons for a committee of publication and to manage the fiscal concerns of the Cultivator.

On motion of Mr. Willey, of Rensselaer,

Resolved, That the thanks of this society be presented to Mr. David Hosack and Judge H. Hickock, for the valuable communications which they have made to the society at this meeting, and that said communications be published in the Cultivator.

The society then adjourned until three o'clock to-morrow afternoon.

February 13th, 1834.

The Society met pursuant to adjournment.

The President of the Society delivered his annual address.

On motion of Mr. Lawrence, of Jefferson,

Resolved, That the petition to be presented to the Legislature be signed by the President and Secretary, in behalf of the Society.

Mr. Hickock, from the executive committee, made the following report, and introduced the subjoined resolution, which was adopted by the Society.

In consequence of the indisposition and absence of the Corresponding Secretary, the Executive Committee report as follows, in regard to the Cattle Fairs recommended to be held at New-York and Albany.

That the committee, at an early day, communicated to the municipal authorities of New-York and Albany the resolution of the Society, and requested to know whether any and what provision would be made for the accommodation of said fairs: That the mayor of Albany promptly responded to the inquiry, and informed the committee that adequate accommodations would be provided by the common council: That the answer from New-York was not given till the 8th Nov., at which time it was considered too late to give timely notice for the fairs to be held at the times designated: That a short notice was however given that the fair would be held at Albany, not on the 2d, as intended, but on the last Tuesday in October: That although the weather was inclement, the collection of select animals, of choice breeds, is believed to have been greater than any before witnessed in this State, or in the United States: That the result of the experiment was deemed so favorable, as to justify the managers in giving notice that a second annual fair will be held at Albany on the first Wednesday and Thursday of October next. The committee are advised that an Agricultural Society has been organized in New-York, and that accommodations will be provided for a fair at that place. The committee recommend that the following resolution be adopted.

Resolved, That a fair for the sale of live stock, seeds, and other products of husbandry, and of household labor, be held in the city of Albany on the first Wednesday and Thursday of October next, and one in the city of New-York on the fourth Wednesday and Thursday of the same month.

On motion of Mr. Hickock,

Resolved, That the constitution be amended in relation to the annual meetings of the Society, and that hereafter the annual meetings be held on the Thursday after the first Tuesday of February.

On motion of Mr. Walsh, it was unanimously

Resolved, That our President justly merits the united thanks of this society, for his unceasing and highly meritorious services in aiding the cause of the farmer, by judiciously and warmly advocating the permanent objects of our state and county agricultural societies, and that a copy of the valuable address just delivered be solicited for the press, together with the documents accompanying the same.

On motion of Mr. Haight,

Resolved, That the proceedings of this Society, together with the communications made at this meeting, and the address of the President, be printed in an extra sheet of the Cultivator.

On motion of Mr. Elmendorf,

Resolved, That the members of this Society make it their special duty, and that the general committee, and the officers and members of the several agricultural societies, be respectfully but urgently requested to make exertions in their respective counties, to obtain early subscriptions to the Cultivator, particularly among the class of farmers who do not at present patronize an agricultural publication.

On motion of Mr. Lawrence,

Resolved, That the friends of agriculture, horticulture, and household manufactures, in the several counties of this state in which societies have not yet been organized, be again earnestly solicited to take the subject under their consideration.

Mr. Bronson, from the committee appointed to recommend suitable persons for officers of the Society for the current year, and also a committee to conduct the Cultivator, made a report.

Whereupon the following persons were duly elected to the offices annexed to their respective names.

Jesse Buel, of Albany, President.

Lewis F. Allen, of Erie county,
Charles H. Hall, of New-York,
Vincent Le Ray De Chaumont, of Jefferson,
Earl Stimson, of Saratoga,
} Vice Presidents.

John F. Bacon, of Albany, Recording Sec'y.

Dr. J. P. Beekman, of Columbia, Corresponding Secretary.

Charles R. Webster, of Albany, Treasurer.

John Townsend, Albany,
Alex. Walsh, Rensselaer,
Horatio Hickock, "
} Additional members of the Executive Committee.

Jesse Buel,
J. P. Beekman,
Jas. D. Wassen,
} Committee of Publication.

The following gentlemen were appointed a general committee, viz.:

Albany—William N. Sill, Caleb N. Bement, D. B. Slingerland.

Allegany—James M'Call, Philip Church.

Broome—Virgil Whitney, David C. Case.

Cattaraugus—Staley N. Clark.
Cayuga—Joseph L. Richardson, E. Manchester, James Wood, Nathaniel Garrow.
Chautauque—Abm. Johnson, Philo Orton.
Chenango—Thomson Mead, Uri Tracy, John Latham.
Clinton—Josiah Fisk.
Columbia—John Murdock, Wm. B. Ludlow, Wm. H. Wilson.
Cortland—Samuel G. Hathaway, Jesse Ives.
Delaware—Jabez Bostwick, M. Keeler.
Dutchess—T. V. W. Anthony, James Mabbit, David Hosack, James Grant.
Erie—Peter B. Porter.
Essex—Elkanah Watson, Henry H. Ross.
Franklin—Luther Bradish.
Genesee—Peter Patterson, Martin O. Coe, Shubael Dunham.
Greene—Anthony I. Van Bergen, J. Adams.
Herkimer—Wm. C. Crain, Frederick P. Bellinger, Daniel C. Henderson.
Jefferson—Edm. Kirby, Egbert Ten Eyck, W. A. Pierpont.
Kings—Joseph Conselyea.
Lewis—Daniel T. Buck, Isaac W. Bostwick, George Ruggles.
Livingston—James S. Wadsworth, Daniel H. Fitzhugh.
Madison—Matthew Pratt, Perry C. Childs, Sylvester Butcher,
Monroe—Wm. Garbut, Wareham Whitney, Jesse Hawley.
Montgomery—Dan. Morrel, Archibald M'Intyre, Samuel Jackson.
New-York—S. Fleet, Dr. J. R. Rhinelander, Samuel Stevens, Jacobus Dyckman, Thomas Hogg, Abraham Bell, Chas. Oakley, Gideon Lee, Alpheus Sherman, Wm. Shaw, James B. Murray.
Niagara—Benjamin Barton.
Oneida—George Drayton, Eli Savage, Gardner Avery, Israel Stoddard, Ephraim Perkins.
Onondaga—David Monroe, John C. Brown, James Geddes, Dan. Bradley.
Ontario—Robert C. Nicholas, Thaddeus Chapin, M. Fairchild.
Orange—George D. Wickham, Jacob S. Waldron, Samuel S. Seward.
Orleans—Abraham Cantine.
Oswego—William M. Cheever.
Otsego—Abm. Roseboom, John Russell, Pascall Franchot, I. Hays.
Putnam—
Queens—John A. King.
Rensselaer—Hen. Vandenburgh, Smith Germon, Abm. Knickerbacker, Henry D. Groove.
Richmond—Richard Crocheron.
Rockland—Cornelius I. Blauvelt.
Saratoga—Wm. Taylor, Philip I. Schuyler, John H. Steele.
St. Lawrence—William Bacon, Theodosius O. Fowler.
Schenectady—Wm. A. S. North.
Schoharie—William C. Bouck, Wm. Deitz.
Seneca—Tompkins Delavan, E. Woodworth.
Steuben—Andrew P. Dickinson, W. Kernan.
Suffolk—Selah B. Strong, Nicholl Floyd.
Sullivan—Wm. Gillespie.
Tioga—David Williams, Caleb Baker.
Tompkins—Nicoll Halsey, C. H. Monell, Benj. Jennings.
Ulster—Abm. Johnson, Daniel Le Fever.
Warren—Dudley Farlan, Wm. M'Donald.
Washington—John M'Donald, Alex. Livingston, Thomas N. Clarke.
Wayne—George Barrell, ——— Adams.
Westchester—Wm. Jay, Peter V. B. Livingston, Philemon Halstead.
Yates—Thomas I. Nevins, Jas. P. Robinson.

The President presented to the Society a quarto agricultural volume of 640 pages, in the German language, with the following letter:

VIENNA, Austria, April 10, 1832.

Sir,—I have the honor of sending to your noble society, in addition to the last, an exemplary of the 3d year of my journal for agriculture, forest matters and horticulture, expressing at the same time my humblest feelings of veneration. CHARLES EARNEST MAYER.

To the President, &c.

On motion of Mr. Groove, of Rensselaer,

Resolved, That the Corresponding Secretary be directed to transmit to Mr. Mayer the thanks of the Society for the volume of his Journal of Agriculture, together with a copy of the publications of the Society.

The Society then adjourned to meet again on the Thursday after the first Tuesday of February next. JESSE BUEL, President.
J. F. BACON, Secretary.

The following article, on under-draining, speaks volumes to the practical farmer. The subject is one of great importance, and Mr. Delavan has conferred a favor on the agricultural community in giving publicity to his successful and praise-worthy experiments.

Ballston, Dec. 3d, 1833.

To JESSE BUEL, Esq.
Pres't of N. Y. State Agr. Society.

SIR,—In reply to your letter of the 27th ult. in which you ask me to state to you the result of my experience of the utility and expense of under-draining farm lands, I have to observe that it is a subject to which I have devoted some attention for the few years during which I have had an interest in agricultural pursuits, and my opinion of its great utility is confirmed by every successive day's observation.

I have applied under-draining to twenty different fields, to the extent of more than 2,000 rods, and compute the average cost at half a dollar per rod. The expense however is determined by the proximity of materials, and the economy with which the work is performed.

I am convinced the operative farmer who performs his own labor, can effect similar improvements considerably less than I have stated.

In some instances the state of my lands required an expenditure of at least twenty dollars per acre in draining. In such cases the production was coarse, unwholesome grasses, of little value, and tillage was quite out of the question. Twenty dollars per acre was the extent of the value of the land; whereas, after being effectually drained and cultivated, these lands have produced Indian corn, oats, wheat and clover, in great luxuriance, paying an income on one hundred dollars the acre.

Every practical farmer is aware of the inconvenience and disadvantage attending the cultivation of fields, the different parts of which are so various as to preclude a uniform crop and uniformity of cultivation. Draining is the remedy for this.

As the improvement here treated of is of the most enduring nature, it would be unfair to charge the expense attending it upon the product of a single year. My belief is, that I have been fully remunerated by the increased products of three years in all cases; and further, in nearly every field I have, at the termination of the stone drains, durable supplies of water for animals, which, in my estimation, fully compensate the whole expense incurred.

Upon the whole, I know of no subject, connected with agricultural improvement, of more importance than draining; and if these facts I have detailed at your request should lead a single individual to experiment on this subject, I shall deem the hour occupied in the detail fully compensated. I am, sir, very respectfully, your obedient servant,

HENRY W. DELAVAN.

In a recent conversation with Mr. Stimson, we learned from him, that he never ploughs deeper than three inches until that portion of the soil becomes so rich by surface manuring as to require a com-mixture of a more inert soil to produce a healthy growth—his manure undergoes a fermentation, before application to the soil, sufficient to reduce it to some degree of fineness—he ploughs for corn but once, and carefully turns over the sod and the manure—uses the eight rowed yellow corn, growing to the tip of the tassel, seven, eight, or nine feet high—plants at the distance of two feet eight inches both ways—puts more kernels in a hill than are required, and pulls up those that are feeble and sickly—Rev. H. Colman does not, (see New-York Farmer, vol. vi. p. 291) overrate his crops. Mr. Stimson, when applying long unrotted manure, uses an instrument to mark off his land, consisting of a piece of timber having three strong pegs in it with a handle to guide it, and drawn by a horse. These pegs mark the land at the distance of two feet eight inches. On both sides of each of these lines, made by the pegs, he turns a furrow; consequently he has his field in ridges of slight elevation, the centres of which are at the distance of two feet eight inches apart, and in the ridges is all his manure, lying between two surfaces of sods. Here the manure lies and ferments. With his instrument he marks off his land across or at right angles to these ridges, and thus makes intersections for his hills in squares of two feet eight inches. The ploughing and hoing of his corn is not to a depth to disturb the manure. For a succeeding crop he opens these ridges by reverse furrows, and thus without additional manure is enabled to bring the rich soil into contact with the young plants.

Letter from Earl Stimson to Jesse Buel, dated

Galway, 18th Dec. 1833.

DEAR SIR,—In reply to yours of the 23d November, requesting some information in regard to the difference between good and bad farming, I submit the following facts:

When the land was first cleared in this town, being about forty-five years since, its timber consisted principally of beach, maple, elm, ash and baswood. The soil produced good crops of all kinds; but the farmers neglecting to save and apply their manure, the consequence was, that their crops decreased, and in about twenty-five years the land would not produce more than one half as much, on an average, as when it was first cleared, and this half cost them more labor than when they got double the quantity of grain or grass.

The land I now till, at first would not produce on an average, more than fifteen or twenty bushels of corn, ten or fifteen bushels of wheat, barley or rye, and from half a ton to one ton of hay per acre. I commenced making, saving and applying my manure in the most economical way on the surface, and ploughing shallow; and in ten or twelve years I found I had brought it back to its original state of fertility. My practice has been to turn over the sod in the fall or spring, spread eight or ten tons of barn-yard manure on an acre, and then plant with corn; and to follow the corn with barley and grass seeds, putting three pounds clover and four of timothy seed on an acre; then let it lay two years to grass: then to go over with the same rotation of crops; and my third rotation was first wheat, second corn, third barley to seed down with, applying about the same quantity of manure every time I turned over the sod. In this way, in the course of twenty years, I got some of my fields to yield from eighty to one hundred bushels of corn, thirty-five to forty bushels of wheat, fifty to sixty bushels of barley, and from two and a half to three and a half tons of hay per acre, and with less labor, except in harvesting, than when I did not raise only about one-third or one-quarter as much. I know from my own experience, that it does not cost one-half, if more than one-third as much, to raise a bushel of grain by good husbandry, as it does by bad management.

The farmers have much improved their farms in this town since our state agricultural

society was organized, and of course their crops have increased in proportion. *I have no doubt that the money which was appropriated by the state to encourage agriculture, has increased the wealth of this county* MORE THAN TWENTY PER CENT. A YEAR *since*, yet there seems to be a want of enterprise with our farmers in promoting their true interest.

The crops in this town were generally good the last season, except corn, which, owing to the unusually wet and cold season, did not yield more than one-third or one-half a usual crop. I planted a field of four acres, which was in my highest state of cultivation. Occupied as a pasture I turned over the sod about the first of June, and planted it two feet eight inches apart, with eight-rowed yellow corn. When the stalks were fit to cut, I had the curiosity to ascertain the weight of the corn and stalks on an acre, and found that I had 38,000 lbs. and 26,000 ears of corn. This was the heaviest growth I think that I ever raised, and I have no doubt that there was 150 to 160 bushels corn when fit to crib. Respectfully yours,

EARL STIMSON.

J. BUEL, Esq.

(To be continued.)

To the Farmers of the State of New-York.

[For the New-York Farmer and American Gardener's Magazine.]

GENTLEMEN,—You must have noticed that when two men ride on one horse, one must ride behind! It was established by that Being who created the world, that the producer or agriculturist should of right ride before, and hold the reins of the common horse. And such was evidently the condition of the producer and consumer in the early ages of the world. As these companions were compelled to travel together, they enjoyed for a time the order of nature; but when both stopped to rest in the early and dark ages, the consumer seized the reins and mounted before, and the producer has been compelled to ride behind ever since. Now, this state of things ought not to be; and a state of peace and order will never exist on earth, while it continues. A majority of men never can be content, while the principles of Eternal Justice are violated to their immediate injury.

We now call upon you to begin the remedy: to attempt a cure for an evil which has long afflicted your whole body; and to remove a burden which has long oppressed you. Many of your brother farmers and producers say to you that the remedy is easy, and will do injustice to no one. It is plain, and may be seen by you all. It is only unitedly to say, we will govern ourselves, and not be governed; we will ride before on the common horse, or we will travel in company no longer! We will say to those who are neither producers nor manufacturers, God created men to work six portions of time out of the seven of his active existence; and that when he was not in want of so many, or much, of the fruits of labor, as at present, God placed him in the garden of this world, not to study politics nor metaphysics, but to be an agriculturist. We will say to the rest of mankind, that while we follow the order which God has established, we are not to be looked into the shade, or ruled over by those who have abandoned it! We are about to tell you that that class on which all other classes of citizens are dependant for *clothing* and *bread*, are not any longer to be ruled by the dependant ones. It is not for want of intelligence among the farmers, but for want of confidence in the knowledge which they have; a confidence which can alone be obtained by associating with their fellows, and participating in the business of deliberative assemblies, that they find themselves neglected. It is a known fact, that a man lost in the wilderness and a long time addicted to solitude, will flee from every man that approaches him! It is this principle of our nature, that makes us imagine that others are superior to ourselves, until we become acquainted with their weakness; and this can only be done by associating with them, where we shall soon find that their talents are diminished by comparison; and your confidence will be increased by a discovery of your strength.

This is not all that is to be accomplished by association. Your neighbors have made your laws and governed you, only because you have not placed before your eyes common objects of action; and when you have had them, you have not been united in the manner by which those objects might be obtained; and therefore they have divided you and ruled you.

In order that you *may* be united, you must meet and associate one with another. You must form yourselves into a society, and enjoy a mutual interchange of thoughts and opinions. You certainly *can* unite in mutually aiding each other by a communication of the results of your experience in farming; and union of sentiment and opinion in one thing will naturally pave the way for union in many things; and the effect of union in your agricultural pursuits will not fail to make you sensible of the importance of union in the business of vindicating your rights. We are well aware that our brethren of the field and mechanic's shop are extremely averse to the business of society makers in general; for they have often been to the community, and especially to the farmers, like dry sponges: they have taken up and absorbed your treasures, and from them nothing could afterwards be squeezed. But still, you must know that the formation of societies is the only way in which you can act in concert, and make your influence to be felt.

But we call upon you to unite with your brethren in different parts of the state, and form societies, as the only way in which you can remove evils under which you now suffer, and which now press heavily upon you, and which, without energetic and united action, your children must painfully deplore in years to come. Is it no evil to have a large portion of the fruits of your labor disposed of to foster the pride and increase the luxuries of a part of community, who are themselves neither producers nor manufacturers, and who with you feel little of the common sympathies of life; and with whom you can hardly be permitted to share in the sociabilities of life, and who, when you meet them, think it no small condescension on their part, to "nod on you!" Is it no evil to have many hundreds of thousands of dollars of your hard earnings disposed of yearly, by men, a majority of whom have had little or no share in the sweat and toil that have earned it; and among whom your voice, or that of the laborer, cannot be heard, or if heard at all, is hushed to silence by ridicule!

Yes, gentlemen, brethren, companions in toil and suffering, we call upon you to form societies and act unitedly, and make your voice to be heard and your influence to be felt! not for the purpose of oppressing any individual on earth, or doing injustice to any class of community; for surely it cannot be injustice to withhold a part of that revenue, most of which is the fruit of our toil!

You are now petitioning, *humbly* petitioning your legislature to grant you a little portion, *merely a remnant* of that which you have placed in their hands, to educate your sons, and assist your daughters in the labors which they cheerfully bestow for the good of the whole.

You are virtually saying to your Senators, Legislators, a principal part of whom are composed of lawyers, merchants, and professional men—Gentlemen, we have built your public works; our bread and clothing, toil and cash, have completed your canals, added value to your lands, and rendered productive your other sources of revenue. Our toil, and the fruit of our labor, have also erected and adorned your public edifices, your halls of legislation, your court-houses, your offices, your churches, your colleges and academies, over which we have given you and your class a paramount control—will you be pleased, at our humble request, to give us back a little to assist us in our toil? We are more encouraged to do this, as your governor has condescendingly said that by feeding the animal that labors in the field he will do more work, and "benefit every other class"! *This must surely be true*, if it is any benefit to the man that labors in the mental and intellectual field, or in the shop or office, to have bread and clothing! Ah, farmers, had you a due proportion of members in your legislative halls, or could those who are there feel any confidence in your united support, they would before this have spoken with an authority that would have brought to your immediate benefit a *large portion* of that revenue which is the fruit of your toil; and you would have had an institution—yea, more than one—in progress, that would have elevated the character of that profession in which it is your duty and pleasure to labor; and in which your sons would be in a course of education to prepare them to render their labor more than doubly effective to increase the productions of the earth, and to prepare them, after they are produced, for the most pleasant and profitable use—where they would be educated so that their influence might be felt where influence is desirable!

We invite you to unite in agricultural societies for other purposes more immediately connected with your employment in life. Nature is not yet half explored; nor one half her capabilities brought to contribute to your comfort or happiness. Yes, farmers, it is true that more than one half of the power of the state of New-York is yet unused, and a large proportion of it remains so only for want of practical and scientific knowledge how to use it to advantage. The formation of a society is the *only way* in which the whole community of the state may be benefitted by the superior knowledge of the few. It is by coming together and seeing the great improvements in husbandry, and the adaptation to use of the different improvements, that all can be effectually benefitted by them; and it is by coming together and conversing on the best methods of cultivating the earth, and adapting particular grains to particular soils, and ascertaining the most valuable seeds, that the knowledge of the few can become universal among you. Publications may do much; but they can do but a small part of what is desirable to be done in this respect. Many subjects of valuable information cannot be so placed on paper as to be profitable to you all; and what is wanted cannot be known, to those who might be disposed to unite, without such personal interviews as may be had in societies such as those which have been formed in your counties, and in which we invite you to take a part.

We are sure also that by the existence of societies such as have been formed in this state, where due notice will be taken of every valuable discovery made by its members, and due publicity will be given to all the improvements that may be made, great encouragement will be given to the enterprise of farmers and mechanics to develope the powers of nature, and to bring to light and useful application her hidden resources of wealth, and means of happy living.

And what must greatly add to this spirit of enterprise, will be the substantial reward that may be bestowed by the societies on those who make discoveries in the arts, by which the toil of the farmer is diminished, and the amount of the productions of the earth is increased. How much may yet be done by the discovery of the application of steam power to the purpose of threshing, ploughing, and performing other labors, which now occupy much time and strength, no man can tell! Yet such things are on the eve of developement, with many others, that will soon facilitate the progress of the agriculturist in the acquisition of wealth and happiness. And no one can tell what new seeds may be introduced from some part of the world, which will double the population of the state, when proper encourage-

ment shall be given to the discoverers of such things.

How little did Landgrave Smith, of Sullivan's Island, near Charleston, in South Carolina, imagine that when he obtained a bag of seed rice from a captain sailing from Madagascar for England, driven into that port by stress of weather in about 1693, that he was adding thousands of happy intelligent immortals to the Carolinas, and giving a staple commodity for trade to a nation,—yet he did it! And how little did Sir Walter Raleigh, who introduced a bag of potatoes into Ireland, imagine that he was adding millions to the population of the British empire, and opening millions of joyful eyes to contemplate the bounties of creation. And yet, for the want of agricultural societies, a century passed away after it had been introduced, before the value of this root was known; and even now it is but just beginning to become general in France and Switzerland. Yea, had such societies then existed to give proper encouragement to such deeds, who can tell how many more discoveries of a similar kind would long before this have added to the numbers, alleviated the miseries, and increased the happiness of mankind? You cannot tell, gentlemen, how much may be yet done to abridge your toils or increase your wealth, by giving such encouragement as will be given by such societies, if you sustain them, to those discoveries of the resources of nature as will be made by the industrious and enterprising among you. It is but recently that the writer of this article, on a little journey, called at a place where flax was dressed by water power for market. There he saw that one man would easily prepare from 60 to 100 lbs. in one day for use, with the help of a machinery that would cost but a small sum. What were his feelings when he remembered that, beside a small stream of water, he had spent many *ten days* in doing that which a feeble man may now do in one day, with the aid of a power then beside him, which he knew not how to use! A few days after he saw the farmer threshing out his grain by horse power: from 100 to 160 bushels of grain could be beaten out in a day. Ah, he well remembered that a few years ago, he had risen early and toiled late to thresh out from 7 to 10 bushels in a day!

A farmer also said to the writer: "I was told last year, that to sow good house ashes on my wheat in the fall as it came out of the ground would add much to the growth. I sowed about five bushels on a part of a field, and have no doubt that for that same five bushels of ashes I have ten bushels of good wheat!" Such small hints have been of vast importance in every branch of agriculture. The writer of this also has raised a large crop of common potatoes, and a large crop of turnips, on the same spot of worn out land, in the same season. The potatoes were planted the 15th of April, and dug and carried to market about the 20th of July; and the turnips were sown immediately after. A plentiful supply of plaster was put on the potatoes, and two coats of ashes on the turnips—one when they were sown, and the other soon after they were up. The potatoes sold in the field before they were dug from the earth for fourteen dollars, and it was believed by good judges that more than sixty bushels of turnips were gathered at the second harvest. This was done without any extraordinary effort, and with very little expense, on half an acre of ground.

The writer also tried the following experiment, as he believes with most perfect success. On a parcel of worn-out ground he planted Indian corn, and by the aid of plaster and ashes, raised a tolerable crop; as soon as the earliest of the corn was ripe, and while the greater part of the stalks were yet green, he gathered the corn, and with the plough and some additional labor he turned the stalks completely under the furrows. He has been informed that the success of the experiment was complete, that the ground was greatly enriched, and that the succeeding crops were abundant.

Such experiments, which will be encouraged and published by agricultural societies, cannot fail greatly to aid the farmer in causing the earth to yield an abundance, where little now is gathered, and especially to make the scathed and barren fields that now yield nothing but the heath of the desert, pour forth treasures to fill their granaries! E. F. W.

Lansingburgh, 10th Feb., 1834.

Plan of an Apiary or Bee-house, by means of which the honey and wax can be taken without destroying the Bees. By G. [For the New-York Farmer.]

First,—Erect a building of wood, of dimensions according to the extent you may wish to avail yourself of the labor of bees. A frame building of 7 feet square, and 7 feet high to the eaves, will contain 90 hives of the dimensions after mentioned. The front should face the south or south-east. The sides of the house within should be shelved with stout plank, well supported by uprights and cross pieces, to hold the hives. The lower shelf may be about a foot from the floor, and the others about 14 inches apart. A tier of shelves is to be placed in the middle of the house, at the same distances from each other; this arrangement will leave two feet gangway between the shelves for the convenience of passing between the hives. There must of course be a door to each gangway, if the shelves are continued from the front to the rear of the house.

Secondly,—The hives must be made as near as may be of 12 inches square, and 12 inches high outside; it being found that a hive of these dimensions, well filled, is sufficient to support an ordinary swarm of bees through the winter. The hives should have a bottom board to fit close, but it need not be nailed fast; each hive must have two openings at bottom, exactly opposite each other, 3 inches wide, and ¼ inch high; these openings are furnished with shutters of tin or thin wood, moveable in a groove, in order to close them when the hives are to be removed. On the opposite side of each hive should be inserted a pane of glass, covered with a shutter, to enable you to see, on raising the shutter, that the hives are full. For the greater convenience of opening and shutting the apertures into the hives, they should be made of a slit of tin long enough to reach from the aperture, when closed, to the outside of the hive. In the front of the house there must be openings to correspond with the front hives within, and on the outside there should be placed a small shelf to each aperture for the bees to alight on.

You may begin to stock your house in the winter with old hives, placing a new hive of the above dimensions in front of the old one, and in the spring the bees, after filling up the old comb, will fall to work in the new hive. As soon as you perceive this, you may drive the bees from the old hive by striking on it, or by injecting the smoke of tobacco, and take it away; or take it away and set it down in front of the house, invert it and take off the bottom board—before night, the bees will have all left it and gone into the new hive. When the new hive is filled, close the apertures, draw it back and place another in front; open the communication, and they will in like manner fill this hive. You thus continue to supply hives till your shelves are full. In the fall you may take up as many as you find there are no bees in, leaving however sufficient honey to support the stock through the winter.

In order to derive the greatest possible advantage from their bees, some people take away in the spring all the old comb and honey that the bees have left unconsumed. But this should not be done until you are well assured that the bees can get their living from the early spring flowers. This can only be done, however, but by those persons the bees will not sting, or by protecting the hands and face from their attacks.

G.

Cultivation of Tares and Swedish Turnips. By S. Hawes. To the Editor of the New-York Farmer.

Mr. Fleet,—Having grown during the past season some tares and Swedish turnips, favorite crops with English farmers, I venture to send you some account of the culture and produce of both. About an acre of land in good condition, not having been recently cropped, was ploughed once, harrowed, and then sown with three bushels of spring tares and half a bushel of oats on the 1st of May last. I had not the seed early enough, or the tares should have been sown by the middle of April.

They grew most vigorously, and by the end of June were in flower, producing quite as much herbage as I ever saw them produce in England—indeed abundant; more than twice as much as any clover I had growing at the same time. From the time they were in flower they were cut as wanted, and given to horses, cattle, and pigs, all which ate them readily. Yet I did not think the stock did so well upon them as in England, possibly from the mode of their growth, which, either owing to the soil or climate, was different to what I had before seen. These went on growing freely after the pods were formed, though, commonly, when pods are formed, the whole strength of the plant is directed to perfect the seed, and the stalks soon cease to grow. They grew till the first week in September, when all were cut down, cured, and stacked. The haum or straw was abundant, and is excellent food for sheep. The seed a poor crop, as from half an acre I had only five bushels, which, even allowing for much waste by fowls whilst growing, was too little, as half an acre ought to produce at least fifteen bushels. I intend to sow an acre with them this spring, and hope they may yield better.

For Swedish turnips I had five acres of land, a good sandy loam, ploughed and harrowed repeatedly till clean, then manured with about twelve good two-horse loads of half rotten manure per acre, which was ploughed in, and the turnips sown at different times, from the 15th of June to the 6th of July.

The seed was drilled on the flat surface 22 inches from row to row, and on the 6th of July we began to hoe out those drilled the 15th of June. But those drilled on the 6th of July we began to hoe on the 20th, being only 14 days from the time of sowing. In England I do not recollect any fit for the hoe in less than three weeks; but here vegetation is more rapid, both of turnips and weeds. In hoeing they were left about ten or twelve inches from plant to plant in the rows. They were hood again in twelve

or fourteen days, and afterwards a third time.

The plants soon covered the ground, the tops meeting, and the crop was an excellent one, equal to any I ever had in England. Part of the ground, which was low and not well drained, produced large turnips, but not so sound or sweet as those grown on high ground in the same field.

The whole were pulled early in November and thrown in heaps, then the tops were cut off and thrown to cattle, the turnips carted home and thrown into piles about 6 or 7 feet wide at the bottom, and gradually coming to a point, which was about 5 feet from the ground. Mould a foot thick was thrown over them, leaving at every 8 or 10 feet a small hole to allow the warm moist vapor to escape, which always arises from the slight fermentation that takes place. No straw was used. The piles have been opened as wanted for use, closing the aperture with an old door and some litter for the time, and we have lost none. Fifteen or sixteen loads were put into an old ice-house for a few weeks, but the stock did not eat them so readily as those which came out of the piles. I doubt whether any cellar will keep roots so well or so sweet as earth alone. The crop was excellent, both in quantity and quality, but no account was kept, even of the number of loads, yet there must have been more than three thousand bushels. Cattle from the first were extremely fond of them; a lot of native wethers were a long time in learning to eat them, but at length did well upon them. My own South-down ewes having been fed on them, had abundance of milk in January, and thus my early lambs will go to grass in good condition. Pigs, old and young, are fond of them, and they need no cooking. In England many store pigs are kept on scraps and bits of Swedish turnips left by cattle.

Of the expense I can give no account, nor have I much faith in such accounts generally. The preparation of the ground, and the sowing, were interrupted by repeated rains, so in pulling them up the men were repeatedly stopped by frost, and had to get them secured as they best could. The culture of tares is nothing, but hoeing turnips is expensive, yet more and better food is yielded by turnips than by any other crop on this loam. On strong soils mangold wurzel would be a better crop, as such soils seldom grow good turnips; but beet, to do well, should be sown in May, and is very liable to be hurt by early frost. Swedish turnips are not injured by even severe frosts, if used quickly after; but freezing and thawing will spoil them. Yours respectfully,

S. Hawes.

Albany, March 11, 1834.

Cultivation of Peach Trees. By R. T. U.

[For the New-York Farmer.]

Mr. Editor,—At page 70 of your last number is an article on the culture of the peach, in which the writer recommends tar. In my intercourse with those who have reared more peach trees than I have, I learn that the application of tar alone is injurious. In New-Jersey they mix three parts of tallow with one of tar. This mixture put about the stock and roots just below the surface of the ground prevents the parent of the peach-worm from depositing its eggs, and does not encrust the soil.

The greatest reliance, however, is in a vigorous and healthy growth. They are accordingly set out in good soil, and regularly pruned or shortened every season in order to give the bearing wood greater vigor. It is found that when thus cut down they are not so liable to the yellows. No plant except the vine bears to have its wood shortened or pruned more than the peach.

Young trees that have been standing in the nursery two or three years, without ever having been transplanted, are apt to have their growth arrested when removed, and are in consequence more liable to the yellows. Young apple trees, particularly Newtown pippins, if allowed to grow from seed, and remain after inoculation three or four years in the nursery, stand two or three years almost stationary when removed into the orchard. All nursery plants should be transplanted once or twice before they are sold, in order to have a large number of roots near the stock. R. T. U.

March, 1834.

Excrementitious Matter of Plants. By A.

[For the New-York Farmer and American Gardener's Magazine.]

Mr. Fleet,—Considerable excitement appears to be produced of late among your correspondents on the subject of the "Excrementitious Matter of Plants." Some declare that the doctrine of the existence of excrementitious matter is totally at variance with all their notions of vegetable economy; others, while they admit the existence of such matter, deny its poisonous qualities, which, by the inventors and advocates of this new theory, are declared to be the cause, (at least, a part of the cause,) of the failure of crops, after being repeated on lands for a certain length of time.

Now, I do not really perceive the necessity for this new theory to explain the cause of the failure of crops; I think that the old system can be made to answer the purpose of explanation perfectly well, at least, as well as any other theory.

When we analyze plants, we find that, with a few exceptions, they are all composed of the same constituents, and that the same is the fact with regard to all vegetable substances; but that the great difference between the different species of plants is owing to the constituent parts existing in different proportions in the different species. The fair conclusion would then appear to be, that the food of all species of plants was precisely the same—made up of the same materials—only that the different plants partook of this food, or of the constituent parts of this food, in different proportions. Taking this view of the subject, it is not a matter of much surprise to see plants, totally opposite in their natures, growing side by side, and receiving their nourishment from the same soil, although one be a deadly poison, and the other possessing properties of the most innocent character. If the different species of plants be all composed of the same parts, only in different proportions, it is fair to conclude that each plant abstracts from the soil in which it grows the different principles which constitute its food in those proportions in which we find those principles to exist in the plant on analyzation; and further, that a plant will continue to grow in a soil so long as that soil continues to furnish those principles in the proportions necessary for the plant in question, and no longer. When any of those substances which constitute the food of that plant cease to exist in the requisite proportions, the plant languishes. This failure on the part of the plant may either arise from a dearth of some particular parts of the food, or from some of the parts existing in too large a proportion. But the proportions in which the different principles exist, may, after the failure of this plant, be proper for the vigorous growth of some other plant different in its nature, and, on applying another plant, we find, as was anticipated, that it thrives well. We continue it, and it languishes, after a time, like the first, and probably from the same cause. We then remove this plant and substitute the first, and we find that it grows equally well as on its first introduction before. From this, then, we would conclude that the last plant had left the constituent principles of the food in such proportions as its vigorous growth required; or that, by the decay of vegetables, or the introduction of manures, the causes of its failure before were now removed.

That the two plants ceased to grow, after being kept on the land a certain length of time, from their having deposited in the soil a poisonous or "unfriendly" matter, I think to be a theory somewhat difficult to defend. I grant that the different species of plants take up from the soil the principles which compose their food, without regard to proportion on the moment of taking up: the choice of principles and proportions is made afterwards, and those parts which are not elected by the plants are given off again to the soil. But, that the parts given off are poisonous, (they are certainly "*unfriendly*," or they would not be given off,) I cannot admit, because the poison is formed within the plant, and must act as such on it in passing off, which is not the case. The plant ceases to grow from the parts remaining in the soil not being in the due proportions. The particular food of the plant becomes "exhausted," a very proper term, instead of the land being "poisoned" by what the plants have given off.

It is stated that "it is to be supposed, that the effect of the excrementitious matter is counteracted by the roots of other kinds of plants, by chemical action taking place in the soil, and by numerous changes produced by frost, heat, rain, and air." Now, the plants are constantly absorbing from the soil and giving back this excrementitious matter, and therefore this change in the nature of this matter must be immediate, or the plants would immediately die from again taking up this poison. Now, admitting that this change is immediate, this excrementitious matter never could act as a cause of the failure of the plant, however long it might be continued. Every fact yet witnessed seems to declare in favor of the old theory, or of the one which I have herein set forth. If the crop is not repeated too often, no evil consequences are shown; but when we repeat it too long, or, in other words, when we claim its support from the soil after its food is all consumed, it fails.

As regards the sweet and sour apple, the pear and the quince grafts, of R. M. W., the wonder of their all growing together is explained by the fact of plants and trees absorbing the food without regard to proportion, in a liquid mass, as above stated; and by

the fact of the food of all vegetable substances being composed of the same principles. The food in a liquid state finds admittance as readily to one species as another; and, circulating from root to leaf, it yields the required proportions to the different branches, whether of the sweet or sour apple, the pear, or the quince. If there were twenty different kinds grafted together, they all would grow equally well. The fact, which all are aware of, that different plants will grow together, is a sufficient reason for concluding that the food is imbibed regardless of proportion or parts from the soil, and a sufficient reason for inferring that one plant suffers no ill from the food of another.

R. M. W.'s statement that a living plant derives nothing, save water, from the earth, must be incorrect, since many plants contain substances which neither water or atmospheric air contain; and if he be correct, the question is, where do these substances come from? That they do not deposite any thing in the soil is an assertion which ought to be reconsidered. His statement, too, that ice and snow are said to contain no caloric, is contrary to all known facts respecting those bodies, as he will perceive by consulting any modern writer on those subjects. "As the subject," he says, "is worthy of minute inquiry," and he hopes it "will receive it through the medium of the Farmer," I have taken the liberty to say this much upon it. "B." also will find no difficulty in answering his question respecting the apple tree of the "curious gardener."

As regards "getting into deep water" on these subjects, I think we need apprehend little danger so long as we adhere to facts. I would recommend, as a faithful buoy to R. M. W., if he wishes to escape any such disaster, any good author on Chemistry or Natural Philosophy.

Yours, with great respect, A.

Brooklyn, March, 1834.

Gypsum—The Food of Plants. By R. M. W. [For the New-York Farmer and American Gardener's Magazine.]

MR. FLEET,—I apprehend Mr. Buel is mistaken in his views, page 140, Vol. VI. of the Farmer. With regard to the operation of gypsum, I am aware that Sir H. Davy contends that gypsum is a component part of clover, and that Mr. Buel and others contend that starch, gluten, animal matter, and lime, are the constituents of wheat; but surely we should not infer that these constituents are derived from any peculiarities in their food. We find by analysis that the poppy contains opium, lettuce a narcotic juice, the wild turnip and horse radish an acid principle, and so to infinity. We find every vegetable containing some constituent peculiar to itself; but it would be absurd to suppose that these constituents exist ready formed in the soil; they are evidently the product of the evaporative powers of the different plants. I take carbonic acid gas to be the only food of plants. This gas may be partially dissolved in water, and taken in by the roots; but the food is principally taken in by the capillary vessels above ground.

The idea of burying gypsum appears to me erroneous. The food of plants is the result of fermentation. The carbonic principle during fermentation is dissolved in oxygen. The soil being heavier than the gas, this food ascends to the surface, but being heavier than atmospheric air will not be apt to ascend it. If it finds gypsum at the surface, it will retain this food by its affinity for carbonic acid gas till the capillary vessels of the plants can take it in and assimilate it. Why the broad leaved plants derive more benefit from gypsum than narrow leaved? Obviously because they have more capillary vessels; for instance, clover and corn will derive much benefit, while timothy and flax will derive little. Gypsum has no agency in promoting fermentation, and as this gas can only be afforded by fermentation, I can see no good reason for burying in the earth. If it has a propensity to retain or attract it in the neighborhood of the capillary vessels, it may obviously be a powerful agent in fertilization. R. M. W.

Potter, March 15, 1834.

REMARKS.—We think R. M. W. is correct in supposing that very little is to be inferred respecting the specific food of plants from the present aids of chemistry; but in reference to the soil displacing the food of vegetation by its greater weight, we are of opinion that he conveys incorrect ideas. One great benefit of stirring the soil undoubtedly arises from its being rendered lighter, or rather more porous, admitting much greater quantities of air. Carbonic acid gas being heavier than atmospheric air, it will descend, and thus bring itself, which R. M. W. considers the only food of plants, into more immediate contact with the spongioles, and with the moisture of the soil. The longer the ground remains unploughed it settles, fills the pores, and consequently displaces and renders comparatively useless the carbonic acid gas. To derive the greatest benefit, therefore, we must, so far as practical husbandry can accomplish it, endeavor to have it settle into the soil, and not to rise above the surface. As far as our acquaintance extends with authors, we are inclined to think that the nourishment which plants derive from the air and carbonic acid gas that exist in such large quantities in the soil, is very greatly underrated. When we remember that the air existing in water is indispensable for the respiration of fish, and that they will soon die if put in water that has been deprived of its air, we should conclude that the air in the soil is of equally great importance to most plants. When water is allowed to run over and stand on a soil, the air will rise in bubbles; and if the water remains any time, the roots soon decay, and the plants die. So also, after a violent or long rain, it is necessary to stir the ground soon after in order to let in the air. From this source Van Helmont's willow undoubtedly derived much of its food. Had he put the roots of his plant in an air tight vessel, and then forced and kept the air out of the soil, we venture to say he would not have recorded such a wonderful growth.—[ED.]

Diary of a Young Gardener. By L. T. [For the New-York Farmer and American Gardener's Magazine.]

MR. EDITOR,—I take the liberty to transcribe the following from my diary for your Magazine, not that it contains any thing really worth publishing, but that it may induce others to adopt the practice of keeping a diary of culture. I make a few promiscuous selections.

Oct. 1, 1832.—Set out strawberries, principally young roots, in clayey soil mixed with black vegetable mould.

Oct. 10—Gathered Isabella grapes, which were far from being fully ripe.

Oct. 15 and 16—Transplanted parsley; set out more strawberries. Quite a severe frost on the morning of the 16th.

Oct. 18—After a frosty night took the plants in pots from the open air into the cellar. They were watered profusely; in consequence, the petioles of leaf stalks, in four or five days, had grown unnaturally long, and had become much blanched, the geraniums particularly. No injury from frost.

Oct. 26—This morning was severely cold—ice more than half an inch thick. Greenhouse plants remaining out of doors became frozen. Before the sun was up took them into the cellar and watered very moderately. Received but very slight injury.

Dec. 21—Put out the tulips which had been frozen several times, in a bed manured with cow dung; the bulbs set in very shallow. Most all grew and flowered well.

Jan. 1, 1833—Transplanted a few lilacs; buds very much expanded; succeeded.

March 15—To-day transplanted lilacs, and planted English beans, Vicia faba, in boxes.

April 10—Peas, radishes, English beans, were up several days ago; radishes sooner than either of the others.

Planted potatoes, cut to one eye, dug a trench, put in cow dung, covered very slightly, and left the soil from the trenches between the rows.

Put fig trees in the open ground. Roses, geraniums, oranges, &c. have been out for more than a week.

April 12—Planted four rows of Tuscarora corn, two manured with cow dung, and two with unfermented bone dust. Most of the corn was scratched up by the neighbors' hens.

April 16—Planted five rows of potatoes with bone manure, unfermented, and three rows with coal ashes and bone manure.

April 19—Sowed white mulberry in drills and broad cast; find the green-house plants to suffer by open exposure, apparently more from being in the sun than from the cold. Nerium oleander not injured.

April 26—Corn up.

May 3—Sowed in drills white mulberry; up about May 17.

May 8—Sowed yellow locusts in drills, 10 to 15 hours after having poured boiling water on them. Up May 17; about a thousandth part of the seed vegetated.

May 25—The foliage of the black walnut is of a yellowish green; that of the hickory nut tree deep dark green; of the Juglans regia, or Madeira nut, of a color between them. Such facts are important to landscape painters.

May 31 to June 6—Planted citron melons in a dry shady situation, all of which failed in coming to maturity.

June 10—The pinks in pots have flowering much more sparingly than those in the ground. If allowed to flower fully and ripen their seeds, will they flower less next year?

June 25 to July 30—Cuttings of figs that were put in pots in April, and kept in the open air, begin to put out leaves rapidly. They gave no signs of growing until this time.

June 26—Although having carefully sowed at different times from the 1st of May annu-

al and biennial flower seeds, very few of them vegetated. I think it is the seedman's fault.

September—Derived no perceptible benefit from bone dust. It must be fermented before using it to see its effects the first season.

Suggestions relative to Farmers' Work for April. By the Editor.

We are under the impression that it would be policy for farmers to sow and plant as largely of the marketable crops, as they would have done had not those public measures been taken which have been so disastrous in their overthrow of confidence or credit. We hardly conceive it possible that Congress will adjourn without adopting some plan that will give to confidence its potency, and thus remove the weight from the elastic spirit of this young and rising nation. If law once more assumes its appropriate influence and its healthful tone, before the energies of the people become sensibly enervated, life and vigor will again pervade the whole system; the rivulets that every where vein our country will be free from their icy fetters, and again swell the streams of prosperity and wealth, carrying down to the cities of the sea the abundant and full-priced harvests. But should derangement stalk abroad over the land until mid-summer, then vain will be all hopes in a joyful harvest for this season. The condition of foreign nations is such that no material stimulus will be given to sales of American produce. Our chief dependence is on prosperity at home.

Ploughing.—Various opinions are given in respect to the depth of ploughing. As a general rule, we believe the most successful farmers plough no deeper than the soil, or rather the turf, extends. This soil is not generally more than two to four inches; consequently if the plough runs five or six inches deep, the soil, or fertilizing portion of the furrow must become so very much diffused that the plants, particularly when young, will not find sufficient nourishment. This being the case, it would seem that the direction so generally given to plough a sandy loam deep, should also depend on the depth of the manured portion of the soil. The best farmers of the present day direct the utmost pains to be taken to turn the sod so completely that it will all ferment. This is done most effectually by one ploughing only, and some, to keep the sod from being in the least turned up by hoeing and ploughing the corn, pass a roller over, and then harrow the field before planting. On this subject see Mr. Stimson's method, page 98.

Oxen.—It is very common, with even good farmers, to keep their working oxen in very thin flesh. This is bad policy; they cannot perform as much nor as heavy work; are not so capable of being substitutes for horses, nor will they last as many years; are fatted for the butcher with greater expense and in longer time. The extra expense in keeping working oxen in good condition does not probably exceed in a whole season the additional work they could thereby do in one month. And when we consider that they consume less food in fatting, and can be moderately worked all the time they are preparing for the butcher, it will be seen that there is economy in keeping a good portion of flesh always on them. Many people are under the impression that oxen in flesh cannot move as fast, nor undergo as much fatigue as they can when they are not much more than skin and bones. This is true with oxen that are well fed and *unaccustomed to labor;* but not otherwise, as many farmers can testify, and as correct reasoning would conclude.

Corn.—In communications from farmers we find that some varieties of corn will yield five pecks of shelled from two bushels of ears, and others but little, if any, more than four pecks. This seems to depend very much on the smallness of the cob. In planting corn, it is recommended to put six to eight kernels in a hill, and then to pull up at the first hoeing all but four of the most healthy spears. See page 98 and 109.

To prevent birds and fowls from scratching up the corn, the seed is covered with tar and wood ashes; and various other methods are adopted, but none that we are acquainted with have any decided advantages.

Skinless Oats.—This kind of oats begins to be considerably cultivated. As yet the seed commands a pretty high price, yet it is advisable, for every farmer who can, to procure at least a few quarts.

Flesh-colored Clover.—It would be well for farmers to furnish themselves with a few pounds, or even a few ounces of this seed, in order to test its merits. It may be of great benefit. See page 10.

Botts in Horses.—This is the season in which these worms are injurious to horses. Horses that have their food frequently seasoned with salt are said to be less liable to injury from them. Since botts seem to be fond of sweet liquids, it may be an advisable precaution to administer molasses with their food.

The Chinese Mulberry.—We should advise every farmer to obtain at least one of the Morus multicaulis. It will not cost more than fifty cents; and by taking cuttings, or by laying, he may next spring have some ten or twenty plants.

Grape Vines.—Let that farmer who has not a good grape vine about his house, mount his horse and go a journey of some 10, 50, or 100 miles, to obtain an Isabella, Catawba, or some other choice native vine. It should make a farmer blush, in these days, to be compelled to say he has no vine to sit under. It implies that he is slow in availing himself of the proffered blessings of Providence—that he cannot think much of adding to the comforts and pleasures of his wife and children.

Grass Seeds.—It is very probable that the farmers of this country, in confining their attention exclusively to clover and timothy, do not realize as much hay and pasture as they would from a greater variety sown in the same field. In England the quantity sown to the acre for mowing is ten pounds of red clover, two of white do., two of yellow do., and one bushel of annual rye grass. For pasture, four of red clover, six of white do., four of yellow do., and one bushel of perennial rye grass. In this country grass seed is generally sown not later than the 15th of April.

Young Turkies.—No kind of domestic fowl sell better than fine turkies; and yet comparatively few are raised in proportion to the numbers hatched. It is recommended to keep them from wet, and to feed them on homony and chopped onions. See page 13.

I lose my patience, and I own it too,
When things are censured, not as false, but true.
Somebody.

Principles of Vegetable Economy. By. R. M. W. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Fleet,—I am aware that my ideas of vegetable economy are at variance with the received opinions of many; but still I think them correct, and as they have been the result of much observation and consideration, I shall adhere to them until some better system can be pointed out to my comprehension. The main dogma of my creed on this subject is, that combustion is a mere solution of matter in oxygen! Thus, all wood, coal, and other combustibles, when we say they are burnt, I conceive they are merely dissolved in oxygen, and thus converted into carbonic acid gas, or the food of plants—are taken in, while in this state, by the capillary vessels of vegetables, assimilated, and become a great part of their substance.

Again,—that all animal or vegetable matter, when undergoing the putrid fermentation, are dissolving in oxygen. In this process, and in combustion, the oxygen combines with the carbonic principle, forms carbonic acid gas, the proper and only food of plants.

This gas is abundant in the atmosphere, and that vegetables that are supplied with an abundance of food, which they absorb, and thereby purify the atmosphere, supplying it with oxygen gas for the use of animals, while they remove the carbonic acid gas, which is improper for animal respiration. The putrid fermentation (the only one farmers are interested in) is therefore a mere solution in oxygen, and should always be promoted in the earth, or in contact with some absorbent, to absorb and retain this food of plants. That gypsum and lime act merely by attracting and retaining this food in the neighborhood of the capillary vessels, and afford nothing of themselves of the nature of food to vegetables. It therefore would follow, that lime and gypsum should be applied on the surface, and I believe two bushels of either is as good as 200 to the acre. Perhaps I may be mistaken in these views, and if so, the Farmer will be open I hope to a refutation of the errors.

R. M. W.

Potter, March 15, 1834.

Cultivation of the Peach. By R. H. B. [For the New-York Farmer and American Gardener's Magazine.]

The few remarks of mine on the cultivation of the Peach Tree, and which appeared in your number for January, were given as the result of many years' attention, while exclusively engaged in that way in the southern part of Virginia. No theory was desired to be established.

When it is said that the destruction of the tree was supposed to be produced by the depredations of a worm on the bark of the root, I intended only to say what was the prevailing opinion in that section of the United States, and this seemed to me to be confirmed by the results in some thousands of trials! and I may add, that I scarcely recollect ever to have lost a peach tree in which there was not a numerous brood of these worms found under the bark of the tree just where it touches the earth.

I would by no means undertake to say that the plan recommended by your Ridgefield correspondent might not prove successful in preventing the deposite of the egg, and of course

the production of the worm; but not having seen it tested, I cannot advise its employment, and I cannot help thinking it far more laborious than cutting them out. My gardener and nurseryman was seldom more than 5 or 6 days employed in taking them out, and he had to operate on 3 or 400 trees.

In speaking of the culture of the peach, nothing was said of raising young trees at the South: this is all important, as not one stone in a hundred will produce a fruit resembling the original, especially if this latter has been inoculated or grafted; this should never be omitted when good fruit is desired: the time, September. Inoculate 200 trees in June or July, and you will be fortunate if you preserve 50. In September 19 out of 20 will take.

Peach trees should not be set deep in the earth; and always apply a bushel or two of sand about the root of each tree. The ground should never be manured from the stable. If the land is *very poor*, let some good mould from the ditches, or hill sides, &c. be applied. Manure ruins the flavor of the fruit, and causes it to rot prematurely. The land for cherries and pears, and I might add apples, cannot well be too rich, but it is otherwise with the peach. The largest and finest peaches I ever saw (the heath and yellow Canada) were raised on a soil that would not have produced more than 10 or 12 bushels of corn to the acre. I have nothing to add to what was formerly said of pruning this fruit-tree, but would earnestly repeat not to spare the knife, and provide as much young wood as possible for the next year's supply. Give the fruit all the light and air their situation will admit of.

If you think the above worth a place in the N. Y. Farmer and American Gardener's Magazine, you are at liberty so to apply it.

Very respectfully, R. H. B.

Washington City, March 16, 1834.

Forcing Asparagus. By Edward Sayres. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Fleet,—After visiting your market at New-York, I am rather surprised at the little attention paid to forcing that useful vegetable the Asparagus, which I deem one of the first importance to the market gardener. The mode of forcing being simple, and the produce generally satisfactory, I trust a few practical remarks on the subject will be acceptable to some of your readers.

As soon as the frost is out of the ground, let a very moderate hot-bed be made, of any convenient size, with hot horse manure; the frame being placed on it in the usual manner, cover the bed three inches thick with earth, whereon the asparagus roots are to be placed, taken from an old bed or nursery rows three or four years old. The roots will require no trimming, but merely placed as thick as possible in the bed, so that the crowns are not placed on one another. This done, they are to be covered three inches with light soil or tanner's bark, when the sashes may be closed to draw the heat; but care must be taken not to let the lights remain on a day after the heat begins to rise, when six or eight inches more of light earth may be covered over the bed. The treatment is simply to give plenty of air in the day, and moderately covering the frame at night; to keep out the frost is sufficient. After the bed has been planted ten or twelve days, the roots will begin to vegetate, when a good watering is to be given every other day; and in three weeks after the time of planting, a good supply of asparagus will appear, and continue, if properly managed from 12 to 15 days. Edward Sayres.

Hyde Park, March 25, 1834.

Agriculture and Agricultural Associations. By A. W. [For the New-York Farmer and American Gardener's Magazine.]

[The following article was written as an introduction to the constitution of the Rensselaer County Agricultural Society; but, in the expectation that the Legislature would deem the claims of Agriculture nearly as important, and nearly as an appropriate object of legislation, as the sustaining of party usages and influence, and would take up the subject with all that prescience and disinterested patriotism which should be characteristic of legislators, the completion and printing of the constitution was delayed, with a view of rendering the Society's operations co-operative with the agency of the State. Should nothing be done this session, we hope it will not be in consequence of any indifference on the part of those who are expected to press and urge the subject until its importance is fully seen, and adequate measures adopted.—Ed.]

"Agriculture, the mother of all arts, and the basis of all national prosperity."

Of all employments, by which man procures subsistence, the most ancient, the most honorable, and the most pleasing and independent, is agriculture. The agriculturist may justly be considered the steward of nature. The earth is his storehouse—all its productions are his treasure—his labor is the key which unlocks them, and all mankind receive their food from his hand. At his command the richest dainties cover his table, and he eats them with a relish sweetened by his labor.

But agriculture is not only like all other human arts, susceptible of endless progressive improvements, but is infinitely more so than any other, or than all others. When we compare the two extremes of good and bad husbandry, exhibited by different cultivators of the earth, we can almost be led to exclaim with the poet,

"Man differs more from man than man from beast."

In one instance, we see the land rather disgraced than improved by cultivation; we see the wild beauties of nature destroyed or disfigured without any adequate compensation by art—buildings exhibiting the insignia of ruin, and threatening desolation—and animals dragging their miserable thread of existence, as if merely to show how far nature could be degenerated. In another instance, we see industry without skill, just supplying the wants of life, but no more. A third exhibits all the innumerable and indescribable beauties of nature, gathered in rich profusion from every climate, and improved by all the efforts of art,—whatever can charm the eye, please the palate, or insure health,—and all changing, in such variety, with every season.

No earthly inducement can be stronger than is offered by these considerations, to improve in the art and science of agriculture; and in no other way can this improvement be so easily and rapidly effected, as by the joint and associated efforts of spirited and enterprising individuals. Expenses and obstacles, which would scarcely be met and overcome by individuals, will become trifling when divided among many; and each one will not only be entitled to the entire stock of benefit, but that stock will be at least doubled by the efforts of laudable emulation.

To produce so desirable an effect is the object of the Rensselaer Agricultural Society—to collect valuable information by printed and written documents, and by personal intercourse and observation from every source whence it can be found, and communicate that information to each member of the society, for the benefit of himself and of mankind in general.

There can be but little doubt but that every acre of ground cultivated in our county, at least, taken collectively, can be made to produce double what it now produces, and that many articles may be introduced, perhaps more profitable than those now cultivated.

With all things in view, it is strongly to be hoped that no man in the county, who has any interest in the cultivation of land, will withhold his patronage, or grudge the little time and expense necessary to become a member.

Van Helmont's Willow: *Mr. Fleet*—Come let us reason about this excrementitious deposition of plants.

Van Helmont tells us that he took a quantity of earth, weighed it, and put it in a box and covered the box with sheet lead. In this earth he planted a willow which weighed 50 lbs., that he watered it with distilled water five years, at the end of which time it was taken out, weighed 169 lbs., and the earth had lost only three ounces. Is it not reasonable to suppose that if the willow had deposited any thing in the earth, the weight of the earth would have increased, not diminished. How will you account for the loss of the three ounces? Again, whence the increase of 119 lbs. in the willow? Surely the distilled water could not furnish carbon, for this increase. Is it not very possible that this tree derived its 119 lbs. increase from the atmosphere? Is it not also possible that the water dissolved three ounces of carbon, which entered the roots with the distilled water, and went into the circulation? In no other way can I account for the loss of three ounces. When we consider that all matter, especially vegetable matter, is resolved into carbonic acid gas, and thrown into the air, it does not appear to me surprising that this food of plants should be taken in and assimilated; but I can never believe that the plants yield any thing by their roots to the earth.

Yours, R. M. W.

February 15th, 1834.

Remarks.—We do know that many plants deposite in the ground matter from their roots, from the fact that the strong odor of the roots remains after the plants are removed. It is not requisite that this excrementitious matter should be distinct from all others, and in ponderable quantities sufficient to be detected by chemical analysis. However far advanced chemistry may be, we have very poor opinion of any present deductions from it when unsupported by, or in opposition to observed facts. It is a fact that some plants will not grow long in succession on the same soil, even by the application of those very substances, and in increased quantities too, which in the first instances yielded the plants abundance of wholesome food. When *chemistry* pronounces that neither ponderable nor imponderable substances are deposited, then we will believe that the roots do not deposite excrementitious matter.—[Ed.]

Fancy Pigeons—The Almond Tumbler. By D. F. A. [For the New-York Farmer.]

Herewith I send you a drawing of the *Almond Tumbler Pigeon.* It was mentioned in your Farmer for last June, but it was erroneously printed "*Almond Jamble,*" and by this mistake rendered unintelligible, even to the fancy. This beautiful little bird deserves more attention than it received in the short notice alluded to, and it being a great favorite with pigeon fanciers, I have endeavored in engraving it to give some idea of its appearance. The drawing was executed from the life, a splendid little specimen, imported with its hen, by a gentleman in this city, from London, in England, at a considerable price —somewhere about $25 the pair. Their plumage exceeds in elegance all of their own tribe, but there are wild varieties that possess a yet greater diversity of color. The Almond Tumbler derives its name from the prevailing color or *ground* (as it is technically termed) of its feathers, which approach as near as possible to the color of the shell of an almond, beautifully interspersed with *black, white,* some *red,* and a changeable *green* and *purple:* these colors should be dispersed over all its plumage, it is then well *broken,* as it is termed, but this is difficult to obtain in the tail and flight feathers; too much white is also objectionable, very little being sufficient to impart a brilliancy and heighten its effect. The name of *Tumbler* is given it from its performing that motion in the air while flying: they will rise to a great height, and a large flock will fly very close together, and as they are rising and descending will suddenly drop several yards in the air, as if shot, turning over backwards at the same time, then recovering their place in the flock or *flight,* will thus often repeat their manœuvre. They will continue long on the wing, perhaps two or three hours at a stretch, and thus afford much amusement to the fancier. This bird is the smallest of the pigeon tribe, and is of a very peculiar shape, being very broad chested, with a *large round* head, a *beak small* as a canary, a white or *pearl eye,* and a fine curved neck. There are some with *feathers* on the legs and feet, but these are little esteemed by the fancy. The *rearing* of these birds is of some importance in London; societies for improving the breed are attended by men of consequence, and prizes up to *twenty guineas* have been awarded to the best bird. There are other varieties of the Tumbler which are more common and of less value. They are of various colors, the *Bearded Tumblers,* as they are called, from a sprinkling of white feathers under the beak resembling a beard, are at present most in fashion as flyers. They are of an uniform color, excepting the flight feathers, tail, and beard, as before mentioned; these must *always be white,* whatever may be the color of the rest of the feathers. Mr. H., corner of Broome and Forsyth streets, has a very handsome flight of these bearded tumblers, as well as several other varieties, for which he has fitted up apartments in the most convenient manner, and are well worth a visit from the *naturalist* or *fancier.* There is also another variety called the *bald-pate* tumblers, which are very good flyers, and may be procured in many places for 50 cents the pair. Tumblers give very little trouble; they will eat any sort of grain or corn, but do best on peas, with a little variety. The almonds, if good birds, will fetch a high price in the market, and will well repay the little trouble they give in the country. Considerable numbers are raised in the city, under all the inconvenience attending their confinement and crowded apartments. Care should be taken by the new beginner to select a stock answering to this description and this drawing, for ignorantly purchasing in the market may disappoint their expectations, furnishing them with birds in *couples* but not in *pairs,* and so defective in quality that their progeny would be without value. The safest way will be to apply for information to the society's rooms, or a *respectable* Fancier, who can direct the purchaser where to find the variety he may be in search of.

D. F. A.

81 Barclay st., New-York, 1834.

Combustion. By R. M. W. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Fleet,—I will mention some circumstances which have come under my observation, and have tended to strengthen my views respecting combustion.

1st. We lay wood in the fire-place; to this we add some living coals of fire; a stream of oxygen gas [atmospheric air containing oxygen] is immediately attracted to the wood, and the wood is consumed or converted into carbonic acid gas, so of coal, whether mineral or vegetable.

2d. Take a candle, light it and set it on a board, in a hogshead of still-house beer, in a state of fermentation; it will be instantly extinguished, because the oxygen cannot approach it, being kept at a distance by the carbonic acid gas escaping from the beer.

3d. Take a plate, put on it a little oil of turpentine, ether, or oil of cloves, set it on fire, place it immediately within the hogshead, and the flame will be immediately extinguished, for combustion cannot be supported a single instant without contact with oxygen gas. A man immersed in the tub of working beer to the chin would be soon suffocated, as much so as he would be in a well which contained carbonic acid. In the putrid fermentation, oxygen first enters, or the water which constitutes the blood of animals, or the moisture of vegetables, is decomposed: hence the heat which uniformly attends decomposition..

These, with many other observations, have convinced me of the indispensable agency of oxygen to all combustion or decomposition, and I submit it, like my former observations, for the consideration of your correspondents.

March 15, 1834. R. M. W.

P. S.—I would observe, that where flame appears, it is owing to the hydrogen—that oxygen, as in the case of charcoal, often consumes without producing flame. Oxygen, then, is elementary fire, and hydrogen the principle of flame.

Suggestions relative to Florists' Work for April and May. By the Editor.

Although the edible productions of the vegetable kingdom are regarded as the substantial bounties, and flowers as the smiles, of Providence, yet we cannot dispense with the latter. We should seek our bread in sorrowfulness were no flowers strewed in our path. Did we not meet the animated and cheering countenances of our fellow creatures, did we not see much in all our journeying through life, to remind us that more than Eden bowers await those who make their fellow creatures smile, how miserable should we be! How kind is Providence! Though we may not have it in our power either to feed the hungry or to clothe the naked, yet we can all produce that effect on the countenances of others, that is so lovely and beautiful, and so reciprocally cheering to the heart. But alas! how many are they who despise this blessing; and instead of laboring to diffuse smiles around them, cause sorrow to corrode the heart, and distress to disfigure the countenance. And how many there are, who, like our Father in Heaven, have abundance to feed and clothe, and to smile on others, and yet, alas! unlike Him, do neither. But let us all endeavor to unite our efforts with those of lovely spring, to make all nature smile. This is peculiarly the province of the fair sex.

Soil.—As a general rule, flowers require a sandy loam, made rich by fermented manures, particularly by rotted leaves or vegetable mould. The ground should be well spaded and rendered as fine as possible. If the seeds are put in pots the soil should be sifted.

SITUATION.—Very few flowers require the sun for any length of time. They succeed better when in a slight shade the greater part of the day, particularly when the heat is most intense. Light and pure air are requisite.

TIME OF SOWING.—From the latter part of April to the first of June flower seeds are put in the ground. The depth, if the seeds are small, should not exceed from one fourth to half an inch. If dry weather is apprehended, a board laid on the drill for two or three days will prevent the moisture from being evaporated. Flower pots are used for the same purpose.

PLAN OF ARRANGEMENT.—Neatness, simplicity, and convenience, should be the characteristics, particularly of small gardens. Ovals and other easy unstudied figures are preferable to squares, diamonds, hearts, and triangles. The plants should be arranged according to their height, so that the high ones do not conceal the others.

PROPAGATION.—Every lady should know how to propagate plants by layers, cuttings, divisions, and offsets. Many of the most valuable plants are increased much more readily by these methods than by seeds.

DOUBLE FLOWERS.—Linnæus calls these *monsters*, a term very inappropriate, to say the least of it, for such beautiful productions of nature. Most double flowering plants do not produce seed, consequently they are increased by other methods. The less completely double they are, the more seeds they contain. Double flowers are produced by fertilizing half-double varieties, by cutting out the anthers, by fertilizing or crossing with different colors, and by single plants set out among those nearly or quite double. The seeds of these are then sown, which will probably produce some double flowers.

VARIABLENESS OF FLOWERS.—Exposure, culture, soil, &c. have a tendency to vary the color and size of flowers.

In order to afford our readers the convenience of having a reference to the best flowe seeds sold by seedsmen of this country, the following list has been prepared for us by Mr. Huxley, at the seedstore 81 Barclay street. The first column gives the botanical names by which they are generally known by seedsmen and gardeners; the second, the English, or common names; the third. height in feet; the fourth, the native country; and the fifth, the color of the flowers. B. stands for blue, F. flesh, G. green, L. lilac, O. orange, P. purple, R. red, S. scarlet, V. variegated, W. white, Y. yellow, D. R. dark red, R. Y. red and yellow, P. Y. purple and yellow.

Adlumia cirrhosa	Spongy flowered adlumia	15	N.America	W
Adonis æstivalis	Pheasants eye	1½	S. Europe	S
Agrostemma cœli rosa	Smooth leaved Agros.	1	Levant	F
" githago	Corn cockle	3	Britain	P
Ageratum mexicanum	Mexican ageratum	1½	Mexico	B
" latifolium	Broad leaved ageratum	1½	Peru	W
Althea ficifolia	Antwerp hollyhock	6	Levant	O
Alyssum minimum	Sweet alyssum	½	Spain	Y
Ambrosia paniculata	Ambrosia	3	N. America	G
Amythystea cærulea	Blue Amethyst	1½	Siberia	B
Amaranthus caudatus	Love lies bleeding	4	E. Indies	R
" hypocondriacus	Prince's feather	5	Virginia	DK
" tricolor	Three colored	2	E. Indies	RY
Anagalis indica	Indian	1	Nepal	B
" cærulea	Blue flowered	½	"	B
Antirrhinum bipunctatum	Two spotted	1	Spain	Y
" triphyllum	Three leaved	1	Sicily	YP
" sparteum	Branching	1	Spain	Y
" versicolor	Various colored	1	France	PY
" pictum	Blue flowered	1	"	B
Anthericum annuum	Annual anthericum	½	C. Good Hope	Y
Anthemis valentina	Purple stalked	1	S. Europe	Y
" arabica	Arabian	1½	Barbary	Y
Argemone mexicana	Mexican argemone	2	Mexico	Y
" albiflora	White flowered	2	"	W
" grandiflora	Great flowered	3	"	Y
" sulphurea	Sulphur colored	1½	"	Su.
Aster chinensis pleno	Double purple China Aster	2	China	P
" " alba	" white " "	2	"	W
" " incarnata	" flesh " "	2	"	F
" " rubra	" red " "	2	"	R
" " obscura	" lilac " "	2	"	L
" " superba	" superb " "	2	"	V
" tenella	Slender	½	C. Good Hope	B
Athanasia annua	Annual	1	Barbary	Y
Balsamina hortensis	Double Balsam	3	East Indies	R
" purpurea	" " purple	2	"	P
" alba	" " white	2	"	W
" coccinea	" " scarlet	2	"	S
" variegata	" " variegated	3	"	V
Brewallia elata	Upright	1½	Peru	B
" alba	White flowered	1	"	W
" demissa	Spreading	½	S. America	B
Blumenbachia insignis	Remarkable	½	Monte V.	W
Briza maxima	Great quaking grass	1½	S. Europe	
Bidens diversifolia	Various leaved	2	Mexico	Y
Cacalia coccinea	Scarlet cacalia	1½	N. Holland	Y
Calendula stellata	Starry	2	Barbary	O
" pluvialis	Small cape marigold	½	C. Good Hope	W
Campanula speculum	Venus looking glass	1	S. Europe	P
Cardiospermum halicacabum	Balloon vine	4	India	W
Calceolaria pinnata	Wing leaved	2	Peru	Y
Carthamus tinctorius	Saffron flower	3	Egypt	O
Centaurea americana	American thistle	2	Missouri	Pk
" crupina	Cyanus major	3	Italy	F
" cyanus minor	Blue bottle	1½	Britain	B
" crocodyllium	Blush flowered	1½	Levant	P
" moschata	Sweet Sultan	2	Persia	P
" suaveolens	Yellow "	1½	Levant	Y
Catananche lutea	" flowered	½	Candia	Y
Claytonia perfoliata	Small "	½	N. America	W
Cistus guttatus	Spotted "	½	England	Y
Clarkia pulchella	Beautiful clarkia	1½	N. America	L
" " alba	White "	1½	"	W
Collinsia grandiflora	Great flowered	1	Colombia	B
" verna	Spring "	½	"	B
Collosnea grandiflora	Great "	1½	N. America	R
" linearis	Linear	½	"	R
Chrysanthemum coronarium	Double yellow	2	Sicily	Y
" " alba	" white	2	S. Europe	W
" " tricolor	Three colored	1½	Barbary	Tri
Centrospermum chrysanthum	Yellow flowered	½	Spain	
Coreopsis tinctoria	Dyers weed	2	Missouri	Y
Celosia cristata	Double red coxcomb	2	Asia	R
" " lutea	" yellow "	2	E. Indies	Y
Coix lachryma	Job's tears	2	"	
Convolvulus minor	Dwarf convolvulus	1	S. Europe	Tri
" major	Blue morning glory	10	"	B

Crepis barbata	Purple eyed crepis	1	Italy	YP
Cucurbita aurantia	Orange gourd	3	East Indies	Y
Datura ceratocaulon	Horn stalked	2	S. America	W
Delphinium consolida	Branching larkspur	3	England	B
" rosea	Double rose larkspur	2	"	Ro
" ajacis	Rocket larkspur	1	Switzerland	Pk
" " major	Tall rocket larkspur	2	"	B
Dianthus chinensis	China pink	1	China	R
Dolichos lablab	Purple hyacinth bean	8	Egypt	P
" " alba	White " "	8	"	W
Dracocephalum canariense	Balm of gilead	3	Canaries	P
Eschscholtzia californica	Californian	1	California	Y
Elshotsia cristata	Crested	1½	Siberia	Pk
Echium violaceum	Violet flowered	3	Austria	B
Euphorbia variegata	Variegated euphorbia	5	Louisiana	
Fumaria glauca	Golden fumaria	½	N. America	Y
Gomphrene globosa	Purple globe amaranthus	1	E. Indies	P
" " alba	White " "	1	"	W
Gilia capitata	Blue flowering gilia	1	Colombia	B
Galinsogea trilobata	Three lobed	3	Peru	O
Gypsophila elegans	Elegant gypsophila	2	Crimea	R
" viscosa	Clammy	1½	Levant	W
Glaucium phœnicium	Red horn poppy	2	England	R
" violaceum	Violet flowered	2	Britain	Y
Helianthus annuus	Tall sunflower	10	S. America	Y
" v. indicus	Dwarf "	3	"	Y
Hibiscus trionum	Bladder ketmia	2	Italy	Y
" vesicarius	African hibiscus	1½	Africa	Y
Humea elegans	Rose colored	6	N. So. Wales	R
Hyoscyamus pictus	Annual	1	S. Europe	YP
" agrestis	Field	1	Hungary	Y
Hieracium annuum luteum	Yellow Hawkweed	3	Britain	Y
" " rubra	Red "	1	"	K
Helinium mexicanum	Mexican		Mexico	
Iberis amara	White candytuft	1	England	W
" umbellata	Purple "	1	S. Europe	P
Impatiens biflora	Two flowered	2	N. America	O
" noli me tangere	Touch me not	2	Britain	Y
" parviflora	Small flowered	1	Siberia	Y
Ipomea coccinea	Scarlet morning glory	10	W. Indies	Sc
" lacunosa	Starry Ipomea	10	N. America	W
" quamoclit	Crimson cypress vine	6	E. Indies	C
" v. alba	White " "	6	"	W
" nil	Blue Ipomea	8	S. Europe	B
" hederacea	Ivy like	10	N. America	B
" hepaticifolia	Hepatica leaved	10	E. Indies	P
" barbigera	Bearded	3	N. America	P
Knautia orientalis	Oriental	1	Levant	R
Kaulfussia amelloides	Amellus like	1	C. Good Hope	B
Kochia scoparia	Summer cypress	3	Greece	G
Lopezia coronata	Coronet flowered	1½	Mexico	R
" racemosa	Racemose	1½	"	R
Lathyrus odoratus strinta	Striped sweet pea	3	Europe	St
" " alba	White " "	3	"	W
" " nigra	Black " "	3	"	B
" " purpureo	Purple " "	3	"	P
" " rosea	Red " "	3	"	R
" magellenicus	Lord Ansons "	6	Cape Horn	Y
" tingitanus	Tangier "	6	Barbary	Sc
" aphaca	Yellow "	3	England	Y
Lotus tetragonolobus	Winged "	1	Sicily	R
Lavatera trimestris	Red lavatera	2	S. Europe	R
" alba	White "	2	"	W
Lupinus alba	White Lupines	3	Levant	W
" luteus	Yellow "	2	Sicily	Y
" hirsutus	Large blue "	3	S. Europe	B
" varius	Small " "	1	"	B
" pilosus	Rose "	3	"	Ro
" bicolor	Two color'd "	½	N. American	B
Lychnis læta	Dwarf Lychnis	½	Portugal	P
Malope trifida	Trifid	2	Barbary	P
Malva crispa	Curled Mallow	5	Syria	W
Martynia proboscidea	Proboscis like	½	America	B
Medicago uncinata	Caterpillars	1	S. Europe	Y
" intertexta	Hedghogs	1	"	Y
" scutellata	Snails	1	"	Y
Mesembryanthemum crystallin.	Ice plant	1	Greece	W
Mimosa pudica	Sensitive plant	1	Brazil	Pk

Mirabilis jalapa	Marvel of Peru	2	W. Indies	R	Zennia elegans	Elegant zennia	2	"	S
" longiflora	" sweet scented of Peru	2	Mexico	W	" tenuifolia	Slender flowered	2	"	S
Momordica balsamina	Balsam apple	4	E. Indies	Y	" multiflora	Great "	2	N. America	R
" lagenaria	" pear	1	"	Y	" " lutea	Yellow "	2	"	Y
Melilotus cærulea	Blue	1½	Switzerland	B	Vicia nissoliana	Nissole's	3	Levant	P
Malcomia maritima	Virgin stock	½	S. Europe	V					
Nigella damascena	Love in a mist	1½	"	B		BIENNIAL AND PERENNIAL FLOWER SEEDS.			
Nolana prostrata	Trailing nolana	½	Peru	B	Aconitum napellus	Monkshood	4	Europe	B
Œnothera purpurea	Purple flowered	1	N. America	P	Althea rosea	Rose Hollyhock	8	China	R
" grandiflora	Great "	2	"	Y	" nigra	Black "	6	Levant	Bl
" odorata	Sweet scented	2	S. America	Y	" flava	Yellow "	6	S. Europe	Y
" rosea alba	Red and white	1	Nepal	RW	" alba	White "	6	"	W
" Lindleyana	Lindleys	1		P	Agrostemma coronaria	Rose campion	3	Italy	R
" tenella	Delicate	½	Chili	P	Antirrhinum majus	Scarlet snapdragon	3	England	S
Papaver rhœas	Garden poppy	1	England	W	Aquilegia vulgaris	Columbine	2	"	B
" fimbriatum	Fringed "	1	"	V	Campanula medium	Canterbury bell	4	Germany	B
" rubro plenum	Double red "	1½	"	R	Canna indica	Indian shot	4	E. Indies	R
Phaseolus multiflorus	Scarlet beans	12	S. America	S	Cheiranthus cheiri	Wall-flower	2	S. Europe	Y
Polygonum orientale	Persicaria	6	E. Indies	R	Dahlia superflua	Double dahlia	6	Mexico	R
Reseda odorata	Sweet mignonette	1	Egypt		Delphinium elatum	Bee larkspur	6	Siberia	B
" frutescens	Tree "	2	"		" grandiflorum	Great flowering	1½	"	B
Rudbeckia amplexicaule	Stem clasping	3	Louisiana	Y	Dianthus caryophyllus	Carnation	2	England	Cr
Ricinus communis	Palma christi	6	E. Indies	G	" plumarius	Pheasants' eye pink	½	Europe	P
Scabiosa stellata	Starry scabious	1½	Spain	B	" montanus	Dwarf mountain	½	Caucasus	R
Scorzonera tingitanum	Tangier Scorzonere	2	Barbary	Y	" barbatus	Sweet William	1½	Germany	Pk
Senecio elegans	Purple Jacobea	2	C. Good Hope	P	Digitalis purpurea	Purple Foxglove	4	England	P
" alba	White "	1	"	W	" alba	White "	4	"	W
Silene armeria	Lobels catchfly	1½	England	R	" grandiflora	Yellow "	4	Switzerland	Y
" alba	White "	1½	"	W	Hedysarum coronarium	French honeysuckle	4	Italy	S
Stevia serrata	Vanilla scented stevia	1	Mexico		Lathyrus latifolius	Everlasting pea	6	England	Pk
Schizanthus pinnatus	Pinnate	2	Chili	WP	Lupinus perennis	Perennial Lupine	2	N. America	B
" porrigens	Spreading	2	"	WP	" polyphyllus	Great flowering Lupine	4	"	P
Solanum melongena	White Egg plant	2	Africa		Lunaria biennis	Honesty or satin flower	4	Germany	P
Tagetes erecta	African marigold	3	Mexico	Y	Lychnis chalcedonica	Scarlet Lychnis	2	Russia	Sc
" patula	French "	2	"	Y	Mathiola incana	Purple Brompton Stock	2	England	P
Talinum ciliatum	Ciliated	1	Chili	P	" coccinea	Scarlet " "	2	"	S
Trifolium odoratum	Sweet trefoil	2	S. Europe		" alba	White " "	2	"	W
" incarnatum	Flesh colored trefoil	1	Italy		" annua	Ten week "	2	S. Europe	S
Tropæolum majus	Tall nasturtium	6	Peru	Or	Œnothera biennis	Tree primrose	4	N. America	Y
" nana	Dwarf "	½	"	Or	Primula auricula	Auricula	½	Switzerland	Y
Xeranthemum lucidum	Golden eternal flower	3	Levant	Y	" polyanthus	Polyanthus	½	Britain	R
" annuum	Annual " "	3	S. Europe	P	" sinensis	China primrose	1	China	P
" orientale	Oriental " "	2	Levant	W	Thunbergia elata	Winged Thunbergia	4	E. Indies	Y
Ximenesia enceloides	Mexican Ximenisia	3	Mexico	Y	Valeriana phu	Garden valerian	3	Germany	W

Retrospective Criticisms on the First Series of the New-York Farmer, Vol. II. Nos. 1 & 2. By the EDITOR.

CHANGING STOCK FROM POOR TO RICH PASTURES.—A writer in the American Farmer holds the following language on this subject:

"In July, 1820, my farm being overstocked with sheep, I sold sixty of the poorest quality, the small diseased ones for *one dollar* per head, to a gentleman living about five miles from me. Our land was quite different in its quality. Mine was a thin, worn-out soil, producing nothing but rye; his was high and very rich land, covered with a thick growth of white clover. At the next season of shearing I took pains to be at his pen. The whole sixty sheep purchased of me had lived through the winter; their produce per head was four pounds of clean washed wool, about three times as great as that of the preceding year; and their weight (but this last was conjecture) was double to what it was when purchased of me. He has at various times since purchased the refuse of my flock, and his example has been imitated by his neighbors in both cases with the same success. I have old worn-out ewes renovated by this shift from scanty to luxuriant pastures.

The same effects result from shifting the pasture of neat cattle and horses. In 1824, I purchased a pair of little oxen; one was eight years old, and the other his elder by six months. They were adjudged to possess a capacity for weighing when fatted—the one 700 lbs. the other 775 lbs. They were taken into my cow pastures, which, though a thin soil, were considerably better than they had been reared on, their living having been hitherto very bad, and food meagre. I gave them my customary allowance to working oxen, and used them much in the yoke. They never had an ear of corn, nor root, from the time I purchased them till their death. I kept them two years. In the month of September, there being a scarcity of beef, I gave them some corn blades and pumpkins for six weeks, and they were sold to the butcher. One of them weighed 890, the other 976 lbs. They were not fat; one of them having but 60, the other 78 lbs. of tallow. If those who reside on the rich soils of Pennsylvania will buy every two years from the starved herds of New-Jersey, they will realize more profit than by any other mode of raising stock. "T. J. R."

It is understood, we presume, by the writer, that the "starved herds" must be bought at their actual, not prospective, value.

ENGLISH BEAN, *Vicia faba.*—Mr. T. Bridgeman gives a full account of the culture of this bean. He recommends them to be planted from the first of February to the first of April, either in boxes, frames, or in the open ground. This is quite an ornamental, and among the first flowering plants. Pea vines are considered excellent food for horses and cattle when cut up and mixed with meal or bran, and if vines of these beans are equally good, they would afford an abundant and early supply.

CUTTINGS OF THE VINE.—Mr. D. Phelan recommends cuttings to be taken from near the bottom of the vine rather than from the top. The eyes should be round and plump, and the joints short.

ARTICHOKES, *Cynara.*—Mr. T. Bridgeman gives an account of the culture of this vegetable in England and in this country. There are two varieties of the garden artichoke, the French and the globe. The seed is sown late in March or early in April, in a bed of a good rich earth, or in drills one inch deep and twelve inches apart. The soil should be light and moist. In the winter they are covered with straw or litter, and in the following spring transplanted in a rich soil. A plantation of artichokes will last six or seven years.

"The winter dressing of artichokes is an important operation; on it depends much of their future success. This should not be given them as long as the season continues mild, that they may have all possible advantage of growth, and be gradually inured to the increasing cold weather; but it should not be deferred to the setting in of hard frost, lest the entire work be lost.

"In the first place, cut all the large leaves close to the ground, leaving the small ones which rise from the hearts of the plants; after this, line and make out a trench in the middle, between each row, from fourteen to sixteen inches wide, presuming that the rows are five feet apart, as directed. Then lightly dig the surface of the beds from trench to trench, burying the weeds, and as you proceed, gather the earth round the crowns of the plants to the height of about six inches, placing it in gently between the young rising leaves without burying them entirely under it; this done, dig the trenches one spade deep, and cast the earth thereof equally between and on each side of the plants, so as to level the ridges, giving them at the same time a neat rounding from; finish by casting up with a shovel the loose earth out of the bottom of trenches, evenly over the ridges, in order that the water occasioned by heavy rains, &c. may immediately run off; on which account the trenches ought to have a gentle declivity, as the lodgement of water about the roots in winter is the greatest evil and danger they have to encounter, even greater than the most severe frosts that we are subject to."

LANDSCAPE GARDENING.—From the Report of the Visiting Committee of the New-York Horticultural Society for 1828, we make an extract. The subject still needs the encouragement of the Society.

"With regard to landscape gardening, the Committee have to report that, from the examination which they were able to make in the vicinity of this city, they are of opinion this part of horticulture is yet in its infancy among us as an art. The art of laying out grounds so as to display all their beauties, and conceal their defects, is a subject of much interest in Europe, where large sums are expended in embellishing the grounds surrounding the dwellings of the proprietors. There the profession of landscape gardener is common, though almost unheard of among us; a profession requiring the practical gardener's skill, with a knowledge of the qualities and nature of forest trees, their capacity for picturesque effect, either separately or in groupes, a correct

taste in selecting natural or creating artificial beauties, and a practised eye in discriminating the varied features of natural scenery. With these qualifications, the landscape gardener has tracts of land of considerable extent and diversity to operate on, assisted by all the resources which the wealth and taste of the proprietor can supply. The grounds attached to the country residences of our citizens are usually too limited to give much opportunity for the display of this style of gardening, and are generally appropriated to the more useful and profitable purposes of the kitchen garden, or the orchard, a small portion near the dwelling being reserved for parterres. There are, however, many beautiful sites in the neighborhood of our city, particularly those which border on our waters, in which a fine effect might be produced, by a proper application of the principles of this branch of horticulture. For improvements in this, as well as in the preceding departments, we must depend upon the greater diffusion of wealth among us, and the consequent greater leisure and opportunities for devotion to the pleasures of such pursuits. It is the legitimate province of our society to accelerate the progress of improvement in this respect; and the committee would beg leave to recommend the subject to their attention, as worthy of the same encouragement which the Society offers to the other branches of horticultural skill. A. Halsey, Chairman.

"New-York, January 27, 1829."

Maple Sugar.—We give the following on this subject, although for the present the time for making the sugar will be past before this number reaches our subscribers:

"In the northern and western sections of this state, particularly in the counties of Jefferson and Lewis, the inhabitants are very laudably engaged in transplanting these trees into orchards, and along the lanes and roads. In the town of Lowville, one farmer has an orchard of six hundred trees. Those growing on low, wet lands, are not as productive of sugar as those on upper lands. The latter may be known by the roughness of the bark, and by growing to a larger size.

"The trees are tapped when about eight or ten inches in diameter, and will, at this period, produce from three to six pounds of sugar each season. Very large trees have been known to produce fifteen pounds. The sap or juice of these trees may be converted either into sugar or well flavored molasses. The best method of obtaining the sugar is to have the buckets perfectly clean; and when sufficient quantity of the sap is collected for boiling, it should be strained through a woollen cloth into the evaporator. The best evaporating vessel should be about four by six feet long, and eight inches deep; the bottom of sheet iron, and the sides of wood, set in mason work, so as to protect the sides from injury by fire. The advantages of this construction are, rapid evaporation, by having the surface of the fluid very great in proportion to its depth, consequently a saving of fuel, and preventing that blackness which is communicated to the sugar when boiled in a vessel entirely of iron. After the fluid is boiled to the consistence of West India molasses, it is allowed to cool, and then strained through fine flannel. It is again put over a gentle fire in a clean vessel, with a quantity of fresh blood well mixed with it. The blood will coagulate, and rise with the impurities to the top, which are carefully skimmed off. After this, a slow evaporation is kept up, taking care not to burn the sugar, until it is sufficiently done to granulate, which may be known by its granulous effect on the tongue. Most people, however, have various and peculiar methods of ascertaining its crystalline state. It should now be removed from the fire, and stirred until cool, when it will be composed of large sparkling grains. The sugar made by this process is found to be far superior to that made in the common way of running it into moulds or cakes, and is susceptible of high refinement."

NEW PUBLICATIONS.

Practical Husbandry.—An Address delivered at the Fifth Anniversary Meeting of the Saratoga County Agricultural Society, at Ballston, Spa, 8th October, 1823. By Earl Stimson, Esq. President Society.

Although we always have had a predilection for rural pursuits, had our labors and habits of industry directed and formed by one who paid more than ordinary attention to good farming, and, for the last ten years, have devoted a great part of our time from sun-rise till ten o'clock in the evening, to writing, reading, and collecting information on subjects relating to agriculture, still we are made to blush on account not only of deficiency in practical information, but of theoretical, founded on actual science. Consciousness of our ignorance would render our business insupportable, and compel us to throw down our pen in disgust and despair, were it not that every day we find abundant evidence that thousands of theoretical and practical farmers are fully as incompetent for the stations they occupy as we feel that we are. When we see men distinguished for deep science setting the whole scientific world reasoning mankind into a theory that is, at last, found to be on wrong premises and from inadequate data, who can blame us for taking a little comfort behind the rampart which the blundering race of men are continually throwing up? When we look abroad, and see thousands of farmers ploughing in manure, which, in proportion to the thickness of their five-inch furrows, is like the floating particles of cream on skimmed milk, and in derision smiling at the folly of book and city farmers, we fold our arms with a good deal of self-complacency, and exclaim, ah, poor souls, the sheriff will soon get your lean cows and pigs, or you will have to harness your nags and trudge off with your wives and children to Michigan or Illinois. All we ask of you is to stop as you go along, and take our paper with you, and by reading such experiments as Mr. Stimson relates, your children may probably be saved from the necessity of clearing new land on the other side of the Rocky Mountains.

Permit me, says (Mr. S.) in compliance with the request of several gentlemen, briefly to subjoin a statement of what I have found to be the most successful and profitable mode of cultivating the farm which I have taken under my immediate care, and upon which I have tried a number of experiments.

The soil of this land is a brown loam, lying on a stratum of lime and sand stone, at the the depth of from three to six feet, projecting out of the ground occasionally on the brink of ridges. The surface was covered with round hard stone, sufficient, when put into half walls with posts and rails, to inclose it in lots from five to ten acres. The original timber was principally beech and maple, mixed with bass wood, elm and hemlock. The whole farm was interspersed with spots low and springy. When first cleared, the dry land was productive both in grain and grass.

It was occupied as four small farms previous to its coming into my possession, and had been so often cropped, without seeding down to grass or being supplied with manure, as to become in a great measure unproductive, not yielding the occupants, on an average, more than twenty bushels of grain, or one ton of hay per acre.

Little or no attention had been paid to the arrangement of the lots; the fences were in a decayed state, and the buildings much out of repair, and the whole was much covered with old logs, stumps, stones, hedges of briars, unprofitable bushes and weeds. For the first four or five years after part of this land came into my possession, I pursued the common way of farming, and half ploughed and harrowed my land over the stones and around the logs and bushes—summer fallowed at the loss of one crop, and ploughed in what little manure I saved, five or six inches deep. I laid out much labor and got small crops.

Tilling my land with hired hands I found, on posting my account, was running me in debt, instead of being a source of profit. This induced me to try some other method, and after several experiments, having for their object the economy of labor, the procuring and application of manure and the rotation of crops, the following has proved the most successful.

In the first place, I drew a plan on paper, arranging the land into square and convenient lots, containing from five to ten acres, having an eye to the convenience of water for each field, and to the transportation of its produce to the barn where it was to be housed, but with no regard to the unevenness of the surface, or the swales of springy land. This land cost about twenty-eight dollars per acre. I commenced fitting the lots, and continued year after year in succession. The management of one may be taken as a specimen of the whole.

I removed the rubbish at an expense of about $2 per acre. The loose stones were then removed, and with posts and rails placed into permanent fences at an average expense of $6 per acre. This expense, added to the first cost of the land, makes an average of $36 per acre, excepting repairs of buildings, when the land was fit for tillage. I then arranged my barn-yards a little dishing, where it was convenient, for making and preserving manure. I drew into them in the fall a quantity of turf and dirt from the knolls around my buildings and the adjacent roads, and yarded my stock upon it during the winter. This course I pursued for a few years, until my crops so increased as to furnish me with manure in a sufficient quantity to give each of my lots a slight coat once in five or six years. In the spring it was thrown into small piles in the yard. In the fall commenced ploughing with a good and faithful ploughman, who turned over the sod about three inches in depth, and from eight to ten inches in width. The dry part was back furrowed into lands of twelve paces, and the wet into lands from five to six paces wide, leaving a deep dead furrow to answer the purpose of a drain. I spread over it from six to eight three-horse loads of manure, per acre, and on the driest and most barren I have added three or four loads of old leeched ashes—rolled it down with a roller five feet long and twenty inches in diameter. This was done to pulverize the lumps, and settle the manure and land together.

This I have done both in the spring and fall: the spring I have found the best time, but not so convenient for carting manure. About the 10th of May it was well dragged, or ploughed with a one-horse plough; if ploughed, it was harrowed down, and if it was wet and spongy it was cast into small ridges, by throwing two furrows together at a distance of two and a half feet from the centre of the ridges, but without disturbing the sod; then cross-marked at the same distance. About the 15th or 20th May, it was planted with eight rowed yellow corn, 12 quarts to the acre, wet in a pickle made of 8 ounces of saltpetre, 2 quarts of boiling water and one gill of tar. This pickle was applied to the seed boiling hot, which was immediately rolled in plaster and planted. The head lands were planted with four rows of potatoes, for the convenience of turning the horse, so as not to break down the corn.

After the corn was out of the ground six or eight inches, it was lightly ploughed both ways—one furrow in a row, dressed out with a hoe

and plastered on the hill five pecks to the acre. After two or three weeks it was ploughed and hoed as before, without disturbing the sod, and suckered before hoeing, leaving three or four stalks on a hill. The potatoes were hoed at the same time with the corn; the first time, the tops were covered about an inch, and the hill left flat; the second time the tops were spread apart with the hoe, and about the same quantity of dirt applied on the hills as before. The whole of this expense, including the manure and interest of the $36, did not exceed $19½ per acre.

In the fall I gathered, on an average, from 60 to 70 bushels of corn per acre, fit for the crib; which, at that time, was worth 56 or 60 cents per bushel; and from 450 to 500 bushels of potatoes, worth about 16 cents per bushel. After the corn was harvested, the hills were harrowed with a two-horse drag. In the spring, I ploughed it just deep enough to turn up the old sod, which had become a fine vegetable mould for a spring crop; and after harrowing the furrows down, sowed it with barley, washed in strong brine, and rolled in plaster, about two and a half bushels of seed per acre, harrowed it, and before cross-harrowing, it was seeded with four quarts of the large red clover seed, and three quarts of timothy. After the barley was out of the ground one or two inches, it was sowed broad-cast with plaster, five or six pecks per acre, and rolled down to pulverize the lumps, and smooth the surface for mowing. The expense of this crop was not to exceed $10 per acre. In this way the land was cleansed, enriched, and prepared for a further rotation of crops.

The second rotation. The sod was turned over the last of August or first of September, manured and rolled down as in the first instance. About the 15th September, I sowed it with red chaff bearded wheat, one and a half bushels per acre, and harrowed it in. The seed was prepared by washing it clean in a strong brine made with salt, and immediately rolled in lime, and I let it lie moist twenty-four hours, to prevent smut and insect. In the fore part of May, five or six pecks of plaster were sowed broad-cast to the acre. The expense of this crop, including manure, was about $16 per acre; the produce from 35 to 40 bushels per acre, worth $1 25 cents per bushel.

Late in the fall, or early in the spring, I turned up the old sod, harrowed and planted it to corn. Tilled, as before mentioned, except the barn-yard manure—the expense about $14 per acre—had from 80 to 100 bushels per acre, worth 44 cents per bushel.

In the fall, or early in the spring, I harrowed down the hills, and in the spring prepared and sowed it with some spring crops suitable to stock down—sowed and rolled as before stated—produce, from 50 to 60 bushels if barley, from 25 to 35, if spring wheat, and from 70 to 80, if oats—from 5 to 600 lbs., if flax, per acre; and afterwards, for two or three years, from 3½ to 4 tons of hay, or pasture in that proportion, per acre. Some seasons, instead of sowing wheat on the sod in the fall, I have turned it over in the spring, rolled and harrowed it, and sowed it with 3 bushels of small or 3½ bushels of large white peas to the acre. After they had been washed in strong brine and rolled in plaster, they were ploughed in on the top of the sod—when out of the ground one or two inches, plastered five or six pecks to the acre, and had from thirty to forty bushels per acre—then, in the fall, turned back the sod and manured it, sowed it with wheat as before stated, and have had from forty to forty-five bushels per acre. The third season have taken a crop of from eighty to one hundred bushels of corn per acre, and the fourth stocked it down with barley. This I have found a good course when my ground was in heart, so that it would answer to take from it four crops of grain before stocking with grass. With this mode of husbandry, as will appear from following out the above calculations, my land has afforded me a handsome profit. * * * * * * *

If our farmers will but awake to a sense of their interest, break the shackles in which custom has bound them, and pursue the proper method of clearing, fencing, ploughing, manuring, and cropping their land, the day cannot be far distant, favored as we are with an excellent soil, when this county will rank with the most productive, and among the most wealthy in the State. Calculate for yourselves, gentlemen, the saving of expense in cultivating a farm after the lots are well arranged and fenced, and the old rubbish and stones are removed, both as it respects labor and implements of husbandry. When your lots are well prepared for crops, one horse, with suitable ploughs and harrows, will answer all the purposes of two, except to plough or harrow stiff sward or clay. It is in the saving of labor and increase of crops that we must expect to increase the profit of our farms. It has once and again been said that the poor man cannot afford to cultivate his farm in this way, but it is a grand mistake, it is the rich man only that is able to bear the prodigal waste of time and money in half clearing and fencing—half saving and applying his manure—half ploughing and harrowing—half preparing and putting in his seed, and half harvesting and securing his crops. This is the way to make a rich man poor, instead of making a poor man rich.

Let me entreat those farmers who feel unfriendly to this Society—those who are incredulous on this subject, and those who do not believe that such large crops can be produced as have been frequently reported to this Society, and attested by the best authority,—to try the experiment on one lot, and keep an exact account as respects quantity of crop and the true cost.

I should be glad to see a liberal premium offered to the person who will raise the greatest quantity of grain the ensuing season upon an acre of old improved land, with the least expense. I am well aware that impositions have been practised upon this society; but shall this destroy it? No. Let us rather cherish it—it has already been productive of great good.

There can be no doubt but in the past year one thousand bushels more grain have been raised in the town in which I reside, through the stimulus of this Society, and that other property has been increased in the same proportion, amounting to more than one thousand dollars. Admitting the same competition has been produced in the other towns, we may safely calculate that this Society has increased the property in the county of Saratoga more than eighteen thousand dollars. Let us suppose Agricultural Societies equally cherished in other counties, and we have an increase of property to this State, through their influence, of more than a million and a half of money *annually*.

Can any man have proper views of national economy, or be a friend to the best interests of his country, who, instead of cherishing, would raise his voice for withdrawing the patronage of the state from an institution productive of so much good.

Laudable and becoming exertions are made in this our land of peace and plenty, to instruct our youth in almost every art and science, and shall we not look forward with fond anticipation to the period, as not far distant, when we shall have seminaries also for teaching this most important, though much neglected art—the art of husbandry. It is the fountain from which we obtain our wealth and earthly happiness. Let us then continue to unite our exertions with the exertions of those who have recommended and patronised the best interests of the State, until the science and practice of Agriculture shall excite that deep interest and that universal attention which its high importance demands.

To the ladies who patronize this Society after what they have here exhibited of their industry and economy—those brightest ornaments of the female part of community—compliments are useless. The works of their own hands praise them. May others be stimulated to go and do likewise.

Note.—Shallow ploughing, and the application of manure on the surface, is contrary to the common theory, as it is contended by some writers that the manure loses its strength by evaporation, when so much exposed to the sun. There may be some loss by this exposure, but not so much as there is by ploughing it in deep. I should always wish, however, that the manure, after being spread from the waggon, might be immediately mixed with about one inch of the surface, either with the plough or harrow after rolling, as the decomposition is much quicker when it comes in contact with the soil, and in this situation it becomes a better conductor of the vegetable elements to the plant. Keeping the vegetable mould as near the surface as possible, I have found not only a great preservation to the plant against the frost, heavy rains, and severe drought, but the sod below absorbs the wash of the manure, and thus prepares it well, when turned back for the next crop. As our new lands are much surer for, and more productive of crops, where the vegetable mould is all on the surface, the nearer I approached the same principle in cultivating the soil, the better I succeeded in raising crops. I have received more benefit from three loads of manure applied as above stated, than from five, when ploughed in deep. I am of opinion that the strength of our soil could never be exhausted with a proper rotation of crops, where all the manure which they produce is carefully preserved, and once in four or five years properly applied to the surface. This I think has been fully verified by our new lands; for, after taking more than one hundred and fifty tons of timber from an acre, it generally produces our heaviest crops of grain and grass.

Alphabet of Scientific Gardening for the Use of Beginners. By James Rennie, M. A. Professor of Zoology, King's College, London. 18mo. pp. 120, William Orr, London, 1833. [Continued from page 41.]

Atmospheric Air.—All water openly exposed contains more or less of the air of the atmosphere, which consists of two gases, namely, twenty-one parts, by measure, of oxygen, and seventy-nine parts of azote or nitrogen, with, in general, about one-thousandth part of carbonic acid gas. It is chiefly owing to the atmospheric air, and a little carbonic acid gas, that common water, though said to be tasteless, is agreeable to drink: for when these are expelled by boiling, it tastes vapid and unpleasant.

That the air contained in the water which enters into plants is important to vegetation, appears from water being found beneficial, in proportion as it has had opportunities of becoming mixed with air. When meadows accordingly are laid under water artificially in the process of irrigation, it is found rather hurtful than beneficial if the water is not kept in motion, but allowed to stagnate.

It is on this account that the water of rivers which run a long course is much better for watering than that of springs or lakes, whose waters contain but a small portion of air, though this does not apply so well to the stagnant water of ponds or ditches, whose deficiency as to atmospheric air is compensated by the greater portion of carbonic acid and other substances derived from the decaying animal and vegetable substances usually abundant in such places.

The best water, however, with respect to the quantity of atmospheric air, is rain, which, falling in small drops, often tossed about by the wind, has an opportunity of collecting a large proportion of air during its descent to the earth; and hence, the smaller the bore of the holes in the rose of a garden watering-pot the better.

As water becomes mixed with air by exposure and agitation, so does the air become mixed with water by its rising in vapor, and the driest air accordingly always contains more or

less water in the state of invisible vapor. The quantity of this vapor is in proportion to the temperature; and hence, the warmer the air the greater proportion of vapor it contains. A beautiful provision for affording some little refreshment to plants at the very time they are exposed to exhaustion in hot weather, the operation of which we shall afterwards see when we come to consider the use of the leaves.

Carbon and Carbonic Acid Gas.—Carbon is pure charcoal, which is well known and easily proved to form a large proportion of most vegetable substances,—the oak, for example, contains sixty ounces in a cubic foot; consequently the living plant must have the power of deriving it from carbonic acid gas, for it has been proved by experiment, that the most finely powdered carbon is not taken up by plants in the solid form. Nothing, indeed, is more hurtful to plants than smoke, which is carbon mixed with watery vapor; though soot, which is condensed and collected smoke, is useful when spread upon the soil, so that water may derive from it a portion of its gases.

All animal and vegetable substances, in a state of fermentation or putrefaction, give out a considerable portion of carbonic gas, and if it is not dissipated by heat, but confined on or beneath the surface of the soil, it will become mixed with the moisture there, and be taken up by the spongelets of the roots of plants. A great quantity of carbonic acid is also produced by the breathing of animals and by burning wood, peat, or coal, and being heavier than the air of the atmosphere, it must all descend to near the surface of the soil, into which much of it must be carried by rains and dews.

The carbonic acid gas thus mixed with water, and taken up along with it into the system of plants, is there decomposed, as we shall afterwards see, into its constituent parts of oxygen and carbon, part of the oxygen being given off into the air, and the rest with the carbon remaining in the plant, where it goes to form most of the solid parts as well as the nutrient pulp.

The carbonic acid also exists in soils combined with lime, magnesia, iron, and some other substances, in the form of carbonates, which are soluble with great difficulty in very small quantities in water, but readily in humic acid, as we shall immediately see.

Azote or Nitrogen.—This gas, as we have already seen, constitutes by much the largest portion of the atmospheric air, and consequently must enter largely into the system of a plant, though it is not found in general to contribute so much to vegetable as it does to animal substances, in all which azote is in considerable proportion.

Azote is found in larger quantity in cabbage, savoys, cauliflower, brocoli, sea-kale, turnips, radishes, mustard and cresses, than in other garden plants, and it is this which in part produces in these the peculiar acrid taste which most of them possess. It is also a chief ingredient in starch and the gluten of wheat. It is the azote also, which, escaping from these when boiled, or when in a state of fermentation or decay, is diffused around and produces an odor in general very strong and disagreeable.

It will follow, that as these plants, when healthy, contain much azote, it ought in rearing them to be abundantly supplied from its two chief sources—the air and decaying animal substances,—in other words, by free air and animal manure. Though when it is an object, as in the rearing of sea-kale, to render the flavor mild, the supply of azote must for the same reason be diminished.

Potass.—When wood or any garden plant is burned to ashes, these are found to consist of a considerable portion of the substance termed potass, which was discovered by Sir H. Davy to consist of a metal termed potassium combined with oxygen and water. Different sorts of plants, however, vary very much in the quantity of potass which they contain; aspen and box-wood, for instance, containing only sixty or eighty pounds in every thousand pounds weight, while sun-flower, fumitory, and wormwood, contain from three hundred and fifty to seven hundred and fifty pounds in every thousand. Sea weeds, and plants growing close by the sea-shore, instead of potass, yield soda, when they are burnt to ashes.

It may be taken as a general rule, that herbs yield four or five times, and shrubs two or three times, as much impure potass as trees; while the leaves produce more than the branches, and the branches more than the trunk; and further, that plants, when green and fresh, yield more than when they have been previously dried.

The process by which this is ascertained is not difficult, and consists in weighing the plant before burning; in washing the ashes twice in their own volume of water; in passing the washings through bloating paper, and in evaporating them to dryness. The dry substance thus obtained will be tolerably pure potass.

The potass is introduced into the system of a plant in the same way as carbon, by being first combined with humic acid, forming humate of potass, and then dissolved in water.

Lime.—Like potass, lime has been proved to be composed of a metallic substance termed calcium, united with oxygen. When thus composed, without the addition of other substances, it is usually called quicklime; when united with carbonic acid, it forms chalk, limestone, marl, and marble; and when united with sulphuric acid, it forms gypsum, or plaster of Paris.

In the process of burning vegetables, lime is found in their ashes, but never, I believe, in such quantities as potass, and consequently it is of less use to supply soils with it artificially on this account; but on account of its uniting with humic acid in form of a humate, and of the compound thus formed being readily dissolved in water, it becomes highly useful.

If quicklime, either fresh burnt or slaked, be mixed with moist vegetables, however hard and fibrous, it soon destroys their texture and forms a mixture, the greater part of which can be dissolved in water, thus rendering what was previously useless fit for the food of plants.

On the other hand, it is injurious to mix quicklime with vegetable substances already soluble in water, or with any sort of dung, or other animal manure, lest it should take up too much humic acid.

Lime, however, is more seldom used in gardens than in farms, and this is so far judicious, that garden soil would often, as appears from what has just been said, be thereby injured, rather than benefitted."

NEW-YORK FARMER.

APRIL 1, 1834.

Do you know I am very fond of flowers? The corn and things of that nature, I look upon as the bounties of a kind Providence—flowers I look upon as his smiles.—WILBERFORCE.

TO CORRESPONDENTS AND INQUIRERS.—We should be pleased to hear from Mr. D., of Orange county, an account of his experiment at irrigation, particularly in reference to any effect on his apple trees.

'A Constant Reader' finds it difficult to procure good spring wheat for seed. He wishes to know if it will not answer to sow fall wheat.

'A Novice in Breeding Cattle' sold, a short horn Durham heifer, two years old, this spring, because she slunk her calf, for one-third less than he gave for her last fall. He wishes to know if she would be more liable to the same accident again, and whether he undersold her.

"MR. EDITOR,—I have been looking for some energetic and patriotic movements at Albany, in reference to provision by the legislature to promote agriculture. Will the legislature be allowed to adjourn without doing any thing? A GREEN COUNTY FARMER."

We cannot tell. Perhaps Judge Buel, of Albany; Dr. Beekman, of Kinderhook; Judge Hickock, or Alexander Walsh, Esq. of Lansingburgh, can inform 'A Green county Farmer.'

The Editor has made a hasty visit to the farm of C. H. Hall, Esq., at Harlaem: a brief notice of which will be given in the next number.

LEGISLATIVE AID TO AGRICULTURE.—After the matter for this paper was in type, we learned that the Committee on Agriculture in one branch of the Legislature of this State has reported unfavorably to the petitioners for aid to the agricultural interest of the State.

HORTICULTURAL SOCIETY.—At a meeting of the Horticultural Society of New-York, held at its Rooms on Tuesday evening, 25th February, the following gentlemen were appointed the Inspecting Committee for the ensuing year:

James K. Hamilton, William Ireland, M. D., Alex. Knox, Jr., Thomas Hogg, John I. Palmer, William Neale, William Reid.

THE WEATHER.—The warm open weather of February, and most of March, has greatly facilitated the operations of both the farm and the garden. A farmer remarked to us that the beautiful weather of February had been nearly of as much benefit to him as it would have been in harvest,—enabling to cut his rails, make his fences, commence his ploughing, and perform many other operations. With old Tusser, we wish

"Good luck to the hoof and the horn,
"Good luck to the flock and the fleece,
"Good luck to the growers of corn,
"With the blessings of plenty and peace."

BREEDING STOCK.—It is recommended, as a general rule, to breed from young stock. A cock, a pullet, and a stag, are to be selected; and a bull not to exceed three years old. Hens are in their prime at three years, and begin to decline when past five. We had always been taught to value yellow-legged fowls, but Mowbray says they "are often of a tender constitution, and always inferior in the quality of their flesh, which is of a loose flabby texture and ordinary flavor."

GRAFTING COMPOSITION.—Almost any substance that will keep out rain, and prevent the graft from becoming dry, will answer the purpose. One part of tallow, two of beeswax, and four of rosin, melted and well incorporated, make a good grafting cement.

BEST VARIETIES OF POTATOES.—The kidneys, foxites, pink-eyes, Soux St. Marie, and the Mercers, are the best for quality, the principal object to be sought after in the potato for the table.

CURRANTS.—The currant is one of the most useful of all our small fruits. As soon as their size will answer, they are made into pies, so that they are in use from June until September. They are great and constant bearers, and will grow upon all varieties of soil.

Although the white and red currant are claimed as natives of the Island of Great Britain, yet they flourish much better in the northern part of the United States than they do in that country.

As the currant is useful, the bush may be rendered quite ornamental in gardens, if proper pains are taken with them at first.

Those who are wishing to have a good

supply of fruit, and at the same time have their bushes ornamental, should procure as many straight well proportioned sprouts, of the last year's growth as he wishes to cultivate. Let these be cut off a couple of inches above where they commenced the year's growth, or where the buds become regular; with a sharp penknife scallop out each bud beginning at the bottom, and proceeding up, at least one foot, or so far as you wish the stem of your bush to remain clear of limbs. In doing this be careful that not one bud is left, on what is designed to go into the ground, or on what is designed for the body of the bush. Stick the sprouts thus prepared in the ground, either where they are to remain, or they may be set one year in nursery form, and afterwards transplanted. Bushes properly prepared in this manner are as sure to live as those that have roots, *and never will sprout from that part where the buds were taken from.*

Every one, who has attempted to train a correct bush, as a standard, knows well what a task it is to keep down the sprouts from the bottom, which if left render it very unsightly. When bushes are trained in this way, the tops may be kept open, so as to admit the sun and air, and the currants will not only be larger, but better flavored.—[Goodsell's Gen. Farmer.]

Description and Drawing of Hussey's Grain Cutter. By the INVENTOR. [For the New-York Farmer, and American Gardener's Magazine.]

[We have seen one of Mr. Hussey's grain cutters, manufactured in this city by Messrs. R. Hoe & Co. It is a simple, substantial machine, and from its construction and the perfect manner of cutting a little artificial field of grain, we would add our own recommendation to that of the respectable names in the certificate. The inventor is about taking it into the grain regions of the western part of the state, to exhibit its operation at the next harvest.—ED.]

This machine consists of a frame of good oak or ash, sustained by two wheels forward, and one wheel or roller in the rear, and is constructed in the following manner: Two sills are connected by several cross rails; on these sills are fixed four posts; two top rails are framed to the tops of the posts, parallel with the sills, and connected also with cross rails, as seen in the plate. To the forward posts is hung the main axle, with journals running in metal boxes: on this axle the wheels are fixed with square boxes: these wheels sustain the forward part of the machine, and furnish the cutting power. Across the rear ends of the sills is fixed a plank floor of good pine, extending several feet beyond the right wheel. This floor is horizontal, and its distance from the ground will be the length of the stubble. On the front edge of this floor is fixed a row of iron teeth, pointing forward horizontally, forming a comb: the teeth are formed of two parts, one part above and one below, and joined at the points, forming a range of mortices, through which runs a saw with the teeth sharp on both sides: this saw is moved by a crank which receives its motion from the main axle.

Two horses are attached to the machine and driven on the stubble, when the teeth are presented to the standing grain, which they receive between them, as the saw with a quick motion cuts it off, the morticed teeth forming a bearer above and below the saw. The velocity of the machine, while cutting, gives an impulse forward to the butts of the straws, causing the grain to fall backwards on the floor. As it accumulates on the floor, it is deposited or pushed off in heaps with a rake formed for the purpose, by the operator, who rides on the machine.

This may certify, that we, the undersigned, members of the Agricultural Society of Hamilton county, state of Ohio, at the request of Mr. Obed Hussey, attended an exhibition of a machine for cutting grain by horse power, invented by him. The experiment was performed at Carthage, in this county, about the first of July last, before a large company of spectators, composed of farmers of the neighborhood, the citizens of Carthage, and several from Cincinnati, who appeared to be united in the expression that it was a valuable improvement in agriculture. In our opinion the experiment was completely successful, although several impediments occurred during the exhibition by the breaking of some weak parts; these obstructions were plainly to be attributed to the imperfect manner in which the machine was made, it being a first experiment, and experience not having yet taught how to proportion the strength of the several parts to meet the stress which each part might be subject to, on its trial, some pieces being of wood, which should have been of iron; but we have no doubt but all these imperfections can be remedied in a second machine. We were satisfied that the impediments referred to were not to be ascribed to any defect in the principle, for, while the machine was in operation, the performance was complete, until some part broke by the violence to which it was subjected, it having two horses attached to it, and they several times driven on a brisk trot; at this speed the grain was cut as well, or better, than when the horses were driven slow. The machine performed well, both at the rate of two and a half and five miles per hour; and although the horses were several times urged, they were not driven so fast at any time as to determine at what speed the machine might be moved, and do good work. The wheat was found to be cut much cleaner, and to be left in better order for binding, than when cut by the cradle. The saw which cuts the grain was made without a temper for cutting, consequently would not continue sharp long at a time; but no difference was perceived in the execution, the grain being cut equally clean, and fast, whether the saw was dull or sharp. This was attributed to the peculiar construction of the cutting apparatus. With regard to the quantity of grain which the machine is capable of cutting in a given time, we can only say, that we saw the machine move at the medium rate of three and a half or four miles per hour, cutting a swarth five feet three inches wide; and we have no doubt but the machine may be extended with advantage to a half a rod in width on ordinary smooth ground. In this case the machine would pass over one acre in going the distance of one mile. From the general satisfaction expressed at the exhibition alluded to, and our own impressions, we would recommend Mr. Hussey's grain cutter to the notice of all grain growers, being satisfied ourselves, that if future trials should equal the first experiment, it will be a valuable improvement to all large farmers.

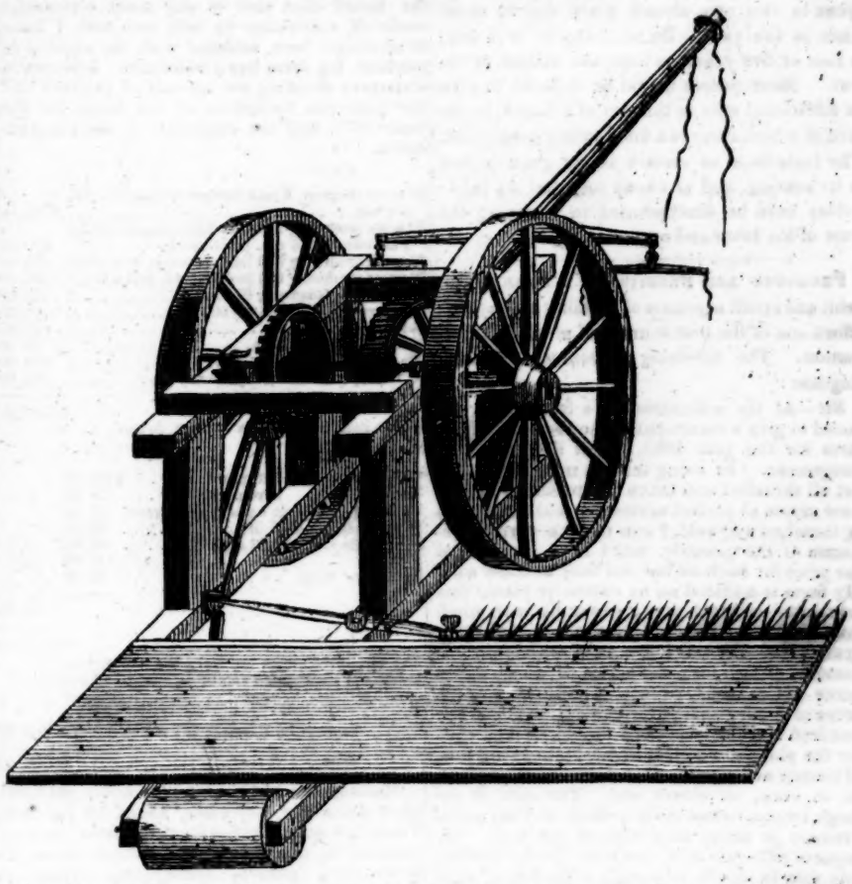
D. C. WALLACE, Sec'y of the
Hamilton Co. Ag. Soc.
J. D. GARRAND,
CALVIN CARPENTER.

I was present at the exhibition of Mr. Hussey's grain cutter, and concur in the statement of D. Wallace and others. The impediments referred to by them were in one instance caused by the loosening of a cog wheel by loss of the wedges, the other by the breaking of a two-inch wood screw, where a strong bolt should have been used. But for these two casualties, I am of the opinion that the machine would have performed without interruption. The performance of the machine while in operation was complete and satisfactory. I have since that time seen a machine on the same principle, constructed by Mr. Hussey, in a strong and durable manner. I have no hesitation in recommending it to be a valuable improvement.

T. B. COFFIN.

H. Huxley & Co., 81 Barclay st. New-York, are agents for selling the above machine.

HUSSEY'S GRAIN CUTTER.



PLANTING A VINE.—Every proprietor of a house in this city should plant one or more vines in the yard By so doing he will add, in four or five years, at least ten dollars to his rent. Most people would be induced to give an additional sum in the rent of a house, in the yard of which there is a fine bearing grape vine. The Isabella is so certain in its growth, and in its bearing, and so cheap too, that no landholder need be disappointed in realizing the fruit of his labor and expense.

PRODUCTS AND PROFITS OF A FARM.—Full debit and credit accounts of farming operations afford one of the best sources of practical information. The following is from the Farmer's Register:

Sir—At the solicitation of a friend I am induced to give a statement of the products of my farm for the year 1833, and of its general arrangement. In doing this, as my grain is not yet all thrashed and taken to market, I cannot now arrive at perfect accuracy; but from what is thrashed and sold, I can make a correct estimate of the quantity, and I have ascertained the price for such as has not been actually sold. My farm is situated on an extensive plain, that was once covered pretty generally with small pine timber. The soil is sand, occasionally gravel, and more or less mixed with loam. It consists of two hundred acres, of which thirty acres are in wood, twenty in meadow, and ten acres of waste, leaving for cultivation about one hundred and forty acres of arable, or land used for the plough, which is divided into seven lots, of twenty acres each. One of these lots is planted in corn, on clover sod. The corn is the large twelve rowed early yellow, and my usual produce is about fifty bushels per acre. My mode of cultivation is, that after the lot has lain one year in clover, to plough it the last of April or first of May, about six inches deep: then furrow both ways with a light corn plough; the first time across the furrows about two feet nine inches apart, the next about three feet. I plant immediately after furrowing. As soon as the corn is up the length of the finger, I harrow it with a large heavy harrow lengthwise with the furrow, as the ground was originally ploughed, and take two rows at a time. Two men or boys follow the harrow with aprons, out of which they plaster the corn, and also raise any plants which may have been thrown down by the harrow passing over them. In a week after I plough once between the rows as they are planted the narrowest way; the men follow with the hoe, and they will finish twenty acres in ten days. In about a fortnight more, I plough it the widest way of planting, twice between the rows, and throw the ground towards the plant. I cut the stalk above the ear as soon as the kernel in the ear is hard, and secure the stalks in shooks. We husk the corn on the hill, and two men will gather one hundred bushels of ears in a day. The lot which was in corn, I put down the succeeding year to oats, and it commonly produces about forty bushels per acre. This lot I seed down with western clover seed, eight quarts per acre. Two lots are in wheat which were likewise the year previous in clover seed. The one is ploughed the first of August, and again just previous to sowing in September; the other but once the last of August or first of September, about a fortnight previous to sowing. These lots have the benefit of my barn manure, which is scattered on such portions as I think require it most.

I commonly sow about one bushel twelve quarts per acre, and my common yield is twenty bushels of wheat per acre. Thus four lots are employed, one in corn, one in oats, two in wheat; the remaining three are in pasture. Two of these are again to be ploughed up in the fall for wheat, and the remaining one is for corn the succeeding season. The experience of twenty years has confirmed me in the belief that this is the most successful mode of cultivation in our soil, and I have at all events been satisfied with the amount of produce my farm has yielded me. I annex a statement showing the amount of produce and the proceeds therefrom of my farm, for the year 1833, and the expenses of its management.

Cr.

20 acres meadow, 2 tons hay per acre, sold *a* $7½ per ton,	$300 00
20 acres producing 1,000 bushels corn, for which I am offered 62½ cts. per bushel,	625 00
40 acres producing 800 bushels wheat, sold *a* 8|6,	850 00
20 acres producing 800 bushels oats, sold *a* 37½,	300 00
500 bushels potatoes *a* 25	125 00
3000 weight of pork, *a* $5 50,	165 00
Sold one beef,	25 00
500 lbs. butter, *a* 16 cts.,	80 00
225 lbs. wool, *a* 50	112 00
55 lambs, increase of my flock,	80 00
	$2,662 00

The item of pasturage not put down.

Dr.

To hiring one man per year,	$100 00	
To do. do. seven months,	70 00	
To hiring 15 days in haying and harvest,	13 12	
3½ tons plaster *a* $7 50,	26 25	
3½ bushels clover seed *a* $7 50,	26 25	
Taxes,	15 00	
Mechanics' bills,	50 00	
		320 63
Income,		$2,341 38
The farm sold *a* $60, for 200 acres,	$12,000	
Stock and implements valued at	1,000	
	$13,000	
Interest on this sum at 7 per ct.		910 00
Gain,		$1,431 83

Making the entire interest upon $13,000, after deducting expenses, about 18 per cent. There are other profits from the farm not enumerated in the within statements, such as house-rent, garden, orcharding, raising of poultry, &c. I will put them against any little incidental expenses not enumerated, but which they will be amply sufficient to defray. The labor upon my farm is performed by two men as above stated, but under my own direction, and all our operations tend to lessen the amount of labor as much as practicable; and I find that nothing conduces more to this result than to keep ahead of my work through the season. For myself, I labor but moderately, but keep up a constant supervision. I will only farther add, that since I have adopted the principle of total abstinence from ardent spirits, at all seasons of the year, I think I have not only gained vastly in the amount of work done by my men, but my farming business has gone on more cheerfully.

Yours, respectfully,

TEUNIS HARDER.

Kinderhook, Columbia Co. Jan. 14, 1834.

LIME AS A MANURE.—"Lime," observes Mr. Lambert in his excellent work on Ireland, "is peculiarly adapted to land full of weeds and roots, as it decomposes such."—"It is a better manure for wheat probably than any other crop; and the quality of wheat grown on land where it is applied is much improved, having a thinner skin, a better color, and yielding more flour."—"It may be freely applied to land devoid of much calcareous matter."

Lime should, as much as possible, be kept to the surface-soil; it readily sinks if ploughed in too deep. Though I have mentioned what many may think very heavy dressings of this manure, yet I have known good effects produced from a far lighter quantity; and I should say, it is safer to begin with a moderate dressing, which can always be increased if found necessary, than to over-dose at first. It is essential that the lime should be well slaked, and in a powdery state before spreading. To this end, if the weather chance to be dry, cover up the heaps with mould for a day or two, they will open as fine as if water-slaked.

LARGE PLOUGHING.—Heston, Sept. 27.—This morning a number of teams, amounting to 400, and employing about 1,200 horses and oxen, assembled at the farm of Francis Sherborn, Esq., at North Hyde in this parish, to give him a volunteer ploughing. The quantity of land ploughed in six hours was 300 acres, or 50 acres per hour. Notwithstanding this amazing achievement, I assure you it falls infinitely short of what would have been accomplished had a more extended knowledge of what was to have taken place been afforded. When it is considered the whole of this was performed unsolicited, we are at a loss which most to admire, the exalted character of the man who could concentrate such a halo of friendship around him, or the feelings of those who could at once appreciate and stamp it with its highest reward, the approbation of his fellow-men.

PRESERVATION OF INK.—It is well known that the common writing ink, commonly made of vinegar or water for the liquid, cause the ink to mother, dry, and of course becoming thick, and unfit for use, unless often mixed up. Having occasion lately to make use of some strong salt-brine, for a certain purpose, and placing the vessel containing the brine near my inkstand, the thought occurred to me, that it would prevent the mothering and drying up of the ink, by mixing it with the thick substance in the inkstand. Accordingly I mixed some of the brine with the inky matter, and found upon a fair trial, my anticipation realized. It keeps the inky compound entirely free and open, consequently the pen clean, which is a great desideratum with all who have use for the goosequill. Please try and satisfy yourself. J. N. B.—[N. E. Farmer.]

RECEIPT FOR DRESSING SALLAD.

BY THE REV. SIDNEY SMITH.

Two large potatoes, pressed through kitchen sieve,
Smoothness and softness to the sallad give,
Of mordent mustard add a single spoon,
Distrust the condiment that bites too soon;
But deem it not, thou man of herbs, a fault,
To add a double quantity of salt,
Four times the spoon with oil of Lucca crown,
And twice with vinegar procured from town;
True flavor needs it, and your poet begs,
The pounded yellow of two well boiled eggs;
Let onions' atoms lurk within the bowl,
And, scarce suspected, animate the whole:
And lastly, in the flavored compound toss
A magic spoonful of anchovy sauce.
O! great and glorious, O! herbaceous treat,—
'Twould tempt the dying anchorite to eat;
Back to the world he'd turn his weary soul,
And plunge his fingers in the sallad bowl.

TO PREVENT BEER FROM BECOMING ACETOUS.—There is a way to prevent beer from getting acetous, or what is called hard, which is as simple as it is efficacious. Reasoning on the plain principles of chemical science, we were led to try it, and have this summer found its truth and advantage. It is nothing more than to suspend a knob of marble by a piece of tape from the bung hole to near the bottom of the barrel, upon which, being pure carbonate of lime, the acid quality of the beer acts on its incipient formation: it consequently becomes neutralised, and thus is kept from turning hard or sour. In our experiment the marble was considerably eaten away, except where the tape encircled, and the beer remained sound and fresh to the last drop. We mention this discovery as being a point of some consequence to householders, and especially to farmers and their laborers in harvest time; for it is more likely that weak beer should become sour than strong; it is much more healthy to drink it fresh than ever so little turned off, and, in the way of economy, many barrels might be saved, which are every year thrown into the hog-tub from becoming undrinkable. It will do good, however, to every species of beer, and, we expect, to any kind of home-made or even foreign wines in cask, which have or are likely to become tart or sour.—[Oxford Journal.]

On cutting Grain Crops with the common Scythe, as practised in Aberdeenshire. By the Rev. JAMES FARQUHARSON, of Alford. [From the Quarterly Journal of Agriculture.]

A gentleman, a member of the Highland Society, usually resident in Edinburgh, having, on a recent visit to this place, witnessed the perfect and expeditious manner in which the grain crops are cut in Aberdeenshire by the scythe, a practice which he had not observed elsewhere, in the course of a pretty extensive journey through other parts of Scotland during this harvest; and having expressed an opinion that a notice of the introduction of such a valuable improvement in this district, and a plain description of the manner in which the various operations are performed, and statement of the advantages of the process, might lead to its adoption in other parts, where it is yet unknown, I have, on the suggestion, written out the following account, which I now take the liberty to present to the Highland Society.

The application of the scythe to the cutting of the grain crops first commenced effectively in this neighborhood, which is near the centre of Aberdeenshire, in the year 1818; and the system was so rapidly perfected, apparently by a spontaneous movement among the tenants and laborers over several parishes, that, in the course of three or four years, the sickle, or reaping-hook, was in a great measure superseded; and now for several years past it is no where to be seen, the whole crops, even those on the smallest possession, being cut down with the scythe.

I have heard it reported, that the improvement had commenced two or three years earlier about the district of Auchterless; but to the certainty of that matter I cannot speak, nor give any detail of its progress there. I can state, however, that it did not come, in any perfected form, into this immediate neighborhood, from any other quarter, as I have witnessed its rude and imperfect beginnings here, and its steps from year to year towards perfection, till, in the end, it has become so satisfactory as to deserve the attention of every agriculturist, who sets a value on the despatch, cheapness, perfection, and at the same time pleasantness to the workman, of the labor he has to perform.

Perhaps I ought to have commenced with stating, that, about thirty years ago, an attempt had been made in this parish, and persisted in for two years, to cut the corn crops with the scythe; but as a notion had been then entertained, that it was indispensable, for laying the ears even, to attach some sort of additional machinery to the common scythe, and which was attempted in the form of a comb or heckle projecting above the blade, the scheme became abortive, owing, as experience now teaches us, to that very notion; and all thought of employing the scythe for harvest work passed away, till it was again revived at the time above stated.

The implement now employed is just the common scythe, universally in use over the kingdom for cutting grass and clover-hay. No change whatever is made in it for cutting heavy or lodged grain crops; but for light standing crops, a very simple addition is found of advantage. This consists of a small rod or shoot, nearly an inch in diameter, of green willow, or rowan, or broom, or any other flexible and tough young wood. It has its thick end twisted into the small iron rod, which aids in attaching the blade of the scythe to its handle, named provincially the Grass-nail. Its small end passes over the upper side of the blade as far as the back, where it is bent upwards in an easy curve, and is brought backward, and tied with several rounds of strong twine to the handle, about 15 inches above the blade. A piece of strong iron wire is sometimes substituted for the willow rod; but the latter is more approved of, being more easily adjusted to the nature and lay of the crop, according to the judgment of the scythesman.

In cutting, the scythesman makes a long sweep, and a broad cut forward, with his scythe*, laying the swathe or cut corn away from the standing corn. The trial has also been made to lay the swathe to the edge of the standing corn, but two inconveniences attend this method: one, that part of the standing corn is irregularly cut by the blade entering it beyond the swathe; the other, that the gatherer, the nature of whose work will be presently described, is liable to be impeded by grasping parts of the uncut corn along with the swathe, and thus experiences considerable hinderance, and much additional fatigue; yet, as it has the advantage of gathering into the new swathe, by the scythe itself, the straggling ears of the former one, it is sometimes had recourse to on small possessions, where there is not a sufficient number of workpeople; but on all the larger farms, which admit of regular bands of scythers, gatherers, binders, and rakers, being so adjusted in number as to give to every one a reasonable share of work, the swathe is always laid away from the standing crop.

A person unacquainted with the operation, on seeing the first two or three strokes of the scythesman, at the commencement of a new bout or swathe, would be apt to conclude that the corn could not be taken up with any regularity, but that a large proportion of the ears would be reversed, as he will see that, immediately on being cut, the ears are inclined away from the swathe to the scythesman's right hand. But the judgment that he would form at this time would be quite erroneous; for, on waiting to see the effect of the succeeding sweeps of the scythe on the part of the corn already cut, he will quickly perceive, that, under the hands of a skillful scythesman, whom experience has taught to measure the sweeps of his scythe accurately, the whole of the ears in the swathe are, step by step, at every succeeding sweep, turned more and more outwards from the standing corn, and at length placed in a position which enables the gatherer to take them up with a sufficient degree of regularity for all practical purposes. It is probably owing to the unavoidable apparent irregularity of the laying of the ears at the first strokes of the scythe, that we have been so late in applying that most powerful and efficient implement for the important purposes of the corn harvest.

Every scythesman is attended by a gatherer, and, as the gathering is the part of the work that women can best perform, the gatherers are generally women. The grain is left by the scythe, having the stems forming an acute angle with the line of the standing corn, the root end of the stems pointing partly backwards and partly inwards towards the uncut part of the field. The gatherer places herself at the root end of the stems, so as to be able to stoop forward nearly in the line in which they are laid, and, by a succession of lifts with her hands, placing the corn on the rear over that which is more forward, stepping at the same time towards the right hand herself, she gathers into one heap what she deems sufficient for a sheaf, and having carefully separated it with her right hand from the forward part of the swathe, then makes a band in the ordinary way, of a part of the gathered heap, and lays the heap upon it.

In no branch of agricultural labor,—not even in the substitution of the two horse plough for the ten oxen one, or of the thrashing machine for the flail,—has a more valuable advance been made, within our memory, from an old and inferior system to a new and better one, than in the adoption of the scythe-reaping.

One advantage is found in the expedition with which the work is performed. On my own small farm, I employ generally two scythes and seven hands, during the few days the reaping lasts; and on taking careful notes, at various times, of the extent of ground cleared by them in a working day of ten hours, which is the common length of the working day at all sorts of labor here, I have found that it amounts, taking the difficult with the easy crops, to an average of 2½ Scotch acres. At this rate, ten good hands, the most economical band of reapers, would clear, in ten hours, 3¾ Scotch, or very nearly 4¾ Imperial acres. This is fully more than twenty good sickle reapers could clear; and it is, in point of fact, a calculation among the workmen themselves, received by them all as correct, that they perform with the scythe something more than double the work they could perform with the sickle.

The work is not only thus more expeditiously, but it is also, in every view, much better performed. The straw is cut off much more closely to the ground, and the provision for the cattle in winter, and the means of making a large quantity of manure, are thus greatly augmented. After the rake too, few, or, if the work has been carefully performed, we may say, no ears of grain are left abroad. The field is, at least, under equal circumstances, much better cleared of both grain and straw than it is in the ordinary application of the sickle; but in no condition of the crop is the superiority of the scythe more clearly marked than when, from a continuance of wet weather, or any other cause, the grain has become over ripe, and drops out in the handling. It is then that the uniform sweep of the scythe, effecting a motion of the ears only in one direction, and leaving them to follow each other without any violent disentanglement, is found to be greatly less hurtful than the long continued shaking in the hand, and the numerous disentanglements of small parcels from the standing crop, which are unavoidable in cutting with the sickle. A stranger to the process of the scythe always very erroneously objects to it, that the heavy stroke must shake out the grain. He does not reflect, that the rapid motion effected by the stroke is confined exclusively to the root end of the straw, and that the ears suffer nothing from it.*

Another advantage, of which the magnitude can scarcely be believed, excepting by those who have learnt to estimate it by their own experience, is the quickness with which the scythed shock winns (drys or withers) thoroughly, and becomes fit for the stack: a matter of the utmost importance in our unsteady climate. The straws are not crushed, as takes place with the hand in reaping with the sickle, and the sheaf, although not more liable to break out of the band, is more elastic and open to the action of the atmosphere. It is perhaps not too much to say, that a sheaf of equal weight, cut with the scythe, becomes ready for the stack, under equal circumstances of weather, in half the time needed by one cut with the sickle.

The most pleasing advantage is the total change of the character of the labor, as it affects the larger part of the work people. The scythesmen and the gatherers, including the rakers, deem their work delightful in comparison with the labor of the sickle.

* The sweep of a good scythesman is from 7 to 8 feet, from his right hand to his left, and his cut forward from 12 to 15 inches, in corn standing nearly fair.

* Pieces of lodged crops, matted with after growth, are those alone to which the scythe is scarcely applicable.

CALCAREOUS SHALE.—We have often recommended to farmers who live in the neighborhood of the outcropping banks of calcareous shale, to make experiments by applying it to their dry sandy lands as a substitute for plaster of paris. There are many places where waggons or sleighs might be loaded with it as easy as with pit gravel, and that too in the neighborhood of those light sandy lands which would be most benefitted by its application. In some parts of this state this same substance is ground and sold for plaster, and when applied to suitable lands gives satisfaction. Surely if it is worth purchasing at three dollars per ton, it would be worth applying to the same lands when it might be applied for one.

MR. COKE—DEVON CATTLE.—Those who are exerting themselves to improve the husbandry of the country should not, on reading the following remarks of one of the best judges of cattle in England, the Rev. Henry Berry, be discouraged:

It is now about forty-two years since Mr. Coke, very properly considering the difficulties he had to encounter on his light poor soil, began to breed Devon cattle, and it is not a little creditable to his judgment that he has, during that period, scarcely referred to any thing which may, properly speaking, be called a cross—certainly, to none of which he could permanently avail himself—and yet his Devons, take them altogether, are by far the best I have ever seen. I much doubt whether the county of Devon can produce such an animal as one of Mr. Coke's bulls. I am totally free from prejudice on these matters, and, therefore, candidly admit the ox in question to have been, in my judgment, at the time I saw him, the most *complete* I ever put my hand on.

The dairy of Devon cows appears to be, and I am assured is, highly productive, each cow, no matter what her other excellences, being rejected which proves a bad milker. They present great uniformity of character, with all the genuine distinctions of the pure North Devon cattle, and, with great aptitude to fatten, possess precisely the compact bodies and short legs, which constitute the *multum in parvo* I have so often advocated. Much as I admire the Norfolk husbandry—much as I have seen to admire in the zeal of Mr. Coke's tenantry to evince their gratitude and respect, there are two things which I must censure and deplore. While the judicious and spirited improvements in tillage of this great landed proprietor have been forcing conviction, and obtaining adoption, his efforts as to the stock of the country have been comparatively vain, and he stands alone, a solitary instance of a man who for forty-two years has produced proof, and invited investigation into the merits of his Devons—has offered and committed costly sacrifices to carry his useful object, without, except in few instances, being able to induce his tenantry to adopt a profitable breed of cattle, for an unprofitable one—a system of economy devoted to the most useful end, in lieu of a system of extravagance, purchasing its advantages at a rate beyond all chance of remuneration. With, as I said before, few exceptions, the miserable and unthrifty homebreds are the cattle kept; generally speaking, little or no regular stock of cattle is maintained, and during the present year, in the month of September, short-horns, (so called,) and every wretched specimen conceivable of all that is bad, were consuming oil-cake in the yards, for the purpose of converting the straw to manure. On this subject Mr. Coke feels, and well he may, much disappointment, but it is not confined—this blindness to their true interests—to the article of cattle alone. In sheep it is the same; and prepared as I am to show, hereafter, that no breed in the island now equals, in profit, that of Holkham, I shall only here observe, that so far behind the rest of the world are the majority of Norfolk men on the subject of stock, that they appear to select with a view to obtaining those qualities which well-informed men would pronounce bad, and invariably reject.

KEEP SEPARATE PASTURES FOR HORSES AND COWS.—One of our subscribers in the state of Pennsylvania has furnished the following remarks:

"We became satisfied many years ago that sheep and milch cows ought not to run together in the same pasture; and we have kept them separate ever since, evidently to the increase of our milk and butter. The last season I kept my horses and cows in separate pastures, to the very visible benefit of both. They had a change of pasture as usual, but were not suffered to run on the same grass. All appeared to be in better than common condition, and the grass was of finer growth when compared with other similar fields in the neighborhood. I am satisfied that farmers suffer much loss by not attending to these *small matters*."—[Genesee Farmer.]

FANNING MILL.—An ingenious wight, named William Gall, has constructed a pair of self-acting fanners, which, without the aid of man, sift wheat, corn, &c. The simplicity of the invention is astonishing. By a funnel of sheet iron, the wheat descends upon an iron wheel full of brackets; the wheel is so nicely balanced, that the moment the wheat falls the wheel revolves, and throws the wheat into a pair of fanners on the flat below. On the outside of the iron wheel is a wooden one, and over it is a belt attached to the fly wheel of the fanners, which impels them, and so long as a particle of wheat is left, the machine moves and throws it out.—[Sat. Eve. Post.]

ROLLING GRAIN.—We have on several occasions presented to our readers the results of using the roller. We now give another extract—from the Genesee Farmer.

On a careful examination of my wheat fields, the doubts I have felt and expressed in a former communication, of the propriety of rolling wheat in autumn, are now entirely removed. Where the roller had passed no cavities were left, and the surface was rendered so compact and smooth, that the water passed off. But where the roller was not used, many of the cavities have been several times, and no doubt will again be, partly filled with ice, which must unavoidably, by its expansion, destroy many plants by breaking their roots.

The season is so far advanced that we cannot expect, even should there be considerable more snow, that it will remain long on the ground; of course, wheat will be exposed to alternate freezing and thawing. This is out of the power of the farmer to prevent, but he may mitigate its effect by the use of the roller in the spring, as soon as the ground is dry to the depth of three or four inches. This operation will not only press down that which has been raised by the frost, but by pulverizing the surface, cause the wheat to spread, and if grass seed has been sown, the beneficial effect on that will be great. I have therefore come to the conclusion, that *the wheat crop is benefitted by the roller both in autumn and spring.*

LIME AND ANIMAL MANURE FOR WHEAT.—Lime has been found by chemical analysis to compose a very considerable portion of the kernel of wheat. It has also been found that any considerable quantity of animal manure, applied to land where wheat is sown, has a tendency to cause it to grow rapid, and of course the sap bursts out, and it rots, as we call it; and when this takes place the kernel becomes shrivelled, and is rendered nearly useless; and no human means can prevent it, if we enrich our land largely with animal manure. A previous clover crop ploughed in is enough to cause wheat to grow sufficiently large, unless we wish for straw instead of kernel. This cannot always conveniently be had when we wish to sow wheat. In such case it is desirable to place something on the soil which will cause it to grow, and not surfeit it. We learn that in Great Britain, nothing has succeeded so well as lime. The farmers there, within fifteen years, have by the proper use of lime been able to procure 30 or 40 per cent. more of the golden crop than formerly.—[Maine Farmer.]

CHARA VULGARIS.—The best way to obtain a view of the circulation of the sap is to rub a piece of the plant gently with a wet bit of leather, and this will take off some of the incrustations of dirt and lime with which this plant is usually invested, and which renders it opaque, and injures it very much as a microscopic object; the rubbing will render it sufficiently transparent. A piece of the plant, about half or three quarters of an inch long, should then be put between two pieces of glass, with a little water, but without being pressed so as to bruise the plant. It is then fixed before a candle, so as no light can be seen but what comes through the stem of the plant. If the plant be pretty free from dirt, the sap will be seen ascending along the middle of the stem, and descending at the side. It has much the same appearance as the circulation of the blood, but the globules are much fewer in number and larger. It may be found rather difficult at first to obtain a good view of it, but it well repays the trouble attending it.

WEEPING TREES.—Mr. William Anderson, Curator of the Botanic Garden at Chelsea, writes as follows to the Prussian Gardening Society. Fascicles or bundles of shoots are often observed on trees, which resemble birds' nests at a distance; but, when examined, they prove to be a cluster of small twigs. Such bundles are observed on different trees, but more frequently on the white or common birch tree. In the year 1808, I observed such a bundle on a Cratægus (Mespilus) Oxyacantha, (hawthorn,) and grafted young thorns with them, which, in two or three years, produced beautiful weeping branches. About the same time I observed such a bundle on Ulmus campestris (common elm,) eyes of which were budded on healthy young trees, and every one produced a long hanging shoot. According to this observation, it would be very easy to produce a large collection of drooping or weeping trees. Our gardeners, however, multiply no species so numerously as the Fraxinus excelsor var pendula (weeping ash); which variety often retains its hanging character when raised from seeds. We possess several such trees, of about ten feet in height, which were raised from seed of the original tree, obtained in 1780 from a nurseryman, who found it a few years previous to that in the neighborhood of Newmarket, in Cambridgeshire.—[Hort. Reg.]

CUTTINGS of myrtles will strike very well in May or June; perhaps better than at any other time. *Fuchsias* are propagated with little trouble in spring. As soon as the young shoots are an inch and a half long, pull them off and plant them in a pot filled with peat, sand and leaf-mould, and let the pots be placed in a warm situation. They will also grow very well in autumn from cuttings of ripened wood, but they require a much longer period than the former to strike. Both the *Lonicera* and *Jasmine* will grow freely if ripened cuttings be planted in August or September; also in spring, provided the previous summer's wood be made use of. —[Ibid.]

RIDING.—On which side of the lady, on horseback, should the gentleman ride?

The translator of the Principles of the Art of Modern Horsemanship says: "When a gentleman accompanies a lady on horseback, he should take the left side of her horse. The custom of taking the right side is derived from the English mode of riding. The law of England directs the left hand to be taken; the gentleman therefore takes the right, to protect the lady from vehicles, &c. which pass on her left. Here the law directs the right hand of the road to be taken, consequently the gentleman should take the left side of the lady's horse. It seems to be best adapted to afford efficient assistance, whatever may occur. The right hand of the gentleman is perfectly free, and may be used either to stop the horse or rescue the lady from danger. He can on this side aid her in disentangling her dress, disengaging her foot from the stirrup, adjusting her reins, and lifting her off her seat, without exposing her to the accidents which might occur to him if he attempted to give her assistance from the other side. It is not so easy to afford assistance to the lady with the left hand, nor is it so easy for the rider to command his own horse with the right hand."

MOUNT VERNON.—Mr. A. H. Everett, in his address before the Massachusetts Horticultural Society, recommends this distinguished place to be purchased by the people for a cemetery for the heroes and worthies of the Revolution. Admirable suggestion!

WASHINGTON AND WELLINGTON.—The readers of the New-York Farmer, who are, we are well persuaded, such admirers of Washington, that his virtues are, like the sublime with the ridiculous, heightened by comparison. The following, however, from the pen of Mr. Loudon, is a beautiful comparison, and a pleasing tribute to the Father of our Republic:

Mr. Cooper informed us that the Duke of Wellington gave him some chestnuts which he had received from America, gathered from the tree which General Washington planted with his own hands, and from which (more fortunate than we have been, though we have received chestnuts three times from the same tree, once from Mrs. Seaton of Washington, and twice from Dr. Mease of Philadelphia,) he has raised three or four plants. We should be curious to know on what principle these chestnuts were sent to the Duke of Wellington: not that the merits of the latter general are at all less than those of the former, because we believe that the actions of all men are the joint results of their organization and the circumstances in which they are placed; but that we should like to know the feelings of the sender, and whether he was a Briton or an American We have always had a great respect for the straight-forward character of the Duke of Wellington, and a profound admiration of General Washington; but, with reference to all that is essentially grand in human nature, we have never for a moment placed the former on a par with the latter. As to the Duke of Wellington's private character as a husband and a master, all that we have heard at Strathfieldsaye and its neighborhood places him, and also the late duchess, very high in our estimation.

WELLINGTON'S CHARGER.—The history of those who are connected with great events in the affairs of nations is always interesting. The readers of the Farmer will not, we trust, object to the recording of the following paragraph in our pages. It is from the conductor of the Gardener's Magazine:

The charger which the duke rode at Waterloo is kept in a paddock adjoining a small flower garden, from which the late duchess used frequently to feed him with bread from her own hands. During the battle the duke was on this horse 15 hours, without once dismounting, and it has never been ridden since that day. It is a small chestnut horse, slightly made, and, as it was quite a colt at the time of battle, it is wonderful how its strength was equal to the excessive fatigue which it must have undergone. There is a proverb in some parts of England, that a chestnut horse is always a good one, that it will always do more work than any horse of the same size, of any other color, and this horse seems to furnish an illustration of its truth.

THE BRAZILIAN BAMBOO.—"Among the trees which attracted our attention," says Dr. Walsh in his travels in Brazil, "were the different species of bamboo, some of which were of enormous size, and some of singular beauty. Of the first kind were many that measured two feet in circumference, sending out large lateral branches, and so tall as to resemble forest trees. Others, of equal magnitude, without any branches, shot out in a single stem divided into regular joints, smooth and tapering to a point, till they attained an immense height. Some were not so thick, but ran up till they became so slender that they bent down, gradually tapering to a very fine point, as thin as a horse hair, and waving across the road like long fishing rods. I cut one of them, which had shot up from the valley below, about the middle, where it was not quite so thick as my wrist. After carrying it some time in my hand, where it felt lighter than a cart whip, I laid it along the road and measured its length, and found it fifteen yards long, so that the entire plant must have been ninety feet, tapering, and polished the whole way with the most exquisite finish." Another kind was so prolific that it covered the whole surface of the forest, climbing to the tops of the highest trees, and clothing them with the most exquisite verdure. Sometimes it ran from tree to tree, covering the whole sloping surface of a glen with a level uniform curtain of the richest drapery. This vegetable surface is called "grass of the thicket." It yields the cattle a supply of green and wholesome fodder at all seasons.

WHEAT HUSBANDRY BY THE PLOUGH.

The usual method of preparing land by a fallow for a corn crop may be briefly stated as follows, and compared with spade culture for *one acre*.

	£	s.	d.
One acre ploughed three times for wheat	2	5	0
Harrowed three times, weeds placed in lumps, and burnt,	1	10	0
One year rent and taxes on one acre, during summer fallow,	1	10	0
One year rent and taxes, during the growth of a crop of wheat,	1	10	0
Sowing with a drill machine, (which costs £50,) per acre	0	2	0
Two and a half bushels of wheat to the acre, after brining and liming, a 8s.	1	0	0
Once hoeing between the drills	0	7	6
The produce may be four quarters, a 60s. £12 0 0	8	4	0

WHEAT HUSBANDRY BY THE SPADE.

	£	s.	d.
Digging one acre of wheat land, twelve inches deep, by two 6-inch spits, and burying weeds as a manure,	2	10	0
Harrowing once	0	2	6
One year's rent and taxes	1	10	0
Dibbling the seed in twelve inch rows, and three inches apart in the rows,	0	7	6
Half a bushel of seed soaked in the liquor from a dung-hill, and wood ashes cast over it,	0	4	0
Deep hand hoeing three times; the second time leaving the plants six inches distant from one another in the rows, with Lord Vernon's hoe. It will be a species of fallowing while the crop is growing.	1	1	0
From this process may be expected six quarters (*in a good wheat soil*) a 60s. £18 0 0	5	15	0

A difference in favor of cultivating wheat by spade husbandry, of £8 9 0 per acre.

Mr. Colgate, of Chevening, in Kent, obtained four quarters from half an acre, by adopting a similar process to this: the ears had ninety corns *each on an average*.

Other corn crops may be raised and planted as described for the wheat; and if spade dug, dibbled, and hoed, will be equally profitable. The barley and rye succeed best in a light soil; for these crops, therefore, the land cannot be too fine. A bearded wheat will also do best on sandy soil, and this may arise from the beard of these grains being principally composed of sandy matter.—[Cottage Farmer.]

MALT AND TEA.—It is a curious fact, that the consumption of malt in England and Wales has been *stationary* for nearly half a century, though the population has more than doubled during that period. [M'Culloch's Commercial Dictionary, p. 723.] The tables, however, show that the public brewers, since 1787, have contrived to manufacture *one-third more* STRONG *beer out of the same quantity of malt!* So that both the quantity and quality of the national beverage have declined. The consumption of genuine tea has also been steadily declining, compared with the population. The sales of the East India Company show that the average consumption per head of *their* teas in 1801, was 1 lb. 13.6 ounces; in 1831, per head, 1 lb. 9.2 oz. showing a decline of full 17 per cent. during the last thirty years. As the fashion of tea-drinking has certainly not declined, it may be concluded, even after allowing for the increased consumption of coffee, either that the decoction has been made weaker, like beer, or that the shops have sold something else in place of the Chinese plant. The numerous convictions of persons having adulterated tea in possession favor the latter conclusion. Monopoly and high duties have operated unfavorably on public morals. "Lovers of tea or coffee," it is truly remarked, "are rarely drinkers:" and Raynal ascribes the sobriety of the Chinese to the use of these grateful beverages, which produce all the good, without the evil consequences, of more powerful stimulants.—[History of the Middle and Working Classes, second edition.]

EARLY CORN.—There are three varieties of corn that every farmer should plant, expressly for using green, without reference to it as a field crop. There are but few people in this country but are fond of boiled green corn; and by a little extra pains the season for using it may be lengthened three or four weeks; that is, it may be procured one month earlier than it generally is by the common field culture.

The varieties which we would recommend are the *Golden Soix, Flour Corn, or York Cheat*, and the *Sweet Corn*.

Golden Soix is the earliest corn with which we are acquainted; the ear is small but well shaped, and the corn is well flavored.

Flour Corn, or *York Cheat*, is a white soft corn, which comes in soon after the former; the ears are of good size, and it does not become hard and flinty, like common corn, on which account it continues longer fit for use. This will last until the sweet corn is fit for use. This corn was named York Cheat, because it was said to have been ground with wheat, in the early settlements of this country, when it could not be detected by the color of the flour. When broken, the inside of the kernel is white and mealy.

Sweet Corn.—This is undoubtedly superior to all other varieties for boiling; is very sweet, and unlike other varieties; it remains soft until it hardens by drying, when it becomes much shrivelled.

Either, or all of these varieties, may be planted in hot beds, or in light boxes of earth, which may be kept in warm situations about a house, until the fore part of May, when the plants may be taken out of the beds or box, and planted in hills in open ground, putting plenty of manure under the hill, and setting the plants pretty deep in the soil, so that if the tops should be killed by late frosts, the roots would not be injured.—[Goodsell's Genesee Farmer.]

HOW TO DESTROY EARWIGS.—Being similarly circumstanced with your correspondent, W. G., I was pleased with the simple, and I have no doubt, efficacious plan of an amateur florist, who destroyed earwigs by taking a piece of coarse paper, folding it round two or three plies and pinning it at the top, thus forming a cap to fit the top of the Dahlia stake loosely, leaving room for the earwigs to creep up and secret themselves after their evening depredations. He then goes round in the morning, takes off the cap, shakes them out in great quantities, and thus destroys them.—A. Essex, Oct. 22, 1833.—[Hort. Reg.]

INCREASE OF HORTICULTURAL SOCIETIES IN ENGLAND.—The London Gardener's Magazine, from which we take the following article, contains the notices of the exhibitions of seventy Horticultural Societies in Great Britain.

We find, from the increase in the number of newspapers sent us during the past year, as well as from the information procured during our late tour, that provincial botanical and horticultural societies are steadily increasing throughout the country. We are exceedingly glad of this; because these societies will diffuse generally a taste for one of the most agreeable and humanising of pursuits, spread improved varieties of culinary vegetables and fruits, and bring into general culture many of the beautiful new hardy plants and shrubs which have been lately introduced from North America and other parts of the world. There is yet another good which will result from the meetings of these societies; and that is, the bringing into personal communication many individuals, gardeners, and others, who, but for assemblages of this sort, might have forever remained unknown to one another. In general, whatever has a tendency to bring men together, so as to enable them to think and act in masses, is favorable to human improvement. The farmer confined to his farm, and the gardener within the walls of his garden, could never have any influence on society, either in the way of disseminating agricultural or horticultural improvement; or in ameliorating the condition or manners of the two classes; but let them meet together two or three times a year, no matter for what purpose, and first thought, and afterwards action, will be the result. In co-operation with these horticultural meetings, it is gratifying to observe the universal circulation of the penny periodicals. Without saying any thing as to the direct value of the matter contained in these publications, it is sufficient for us that their tendency is to create a taste for reading: a taste which no less an authority than Sir John Herschel has observed is, of all others, the best "which can possibly be imagined for a hard working countryman after his daily toil, or in its intervals." (See the Penny Magazine for Sept. 28, 1833.) An idea so gratifying has not been presented to us since we commenced the Gardener's Magazine.

HEDGING.—To ascertain in what way fields can be kept enclosed, with the least expense, is a matter of importance to every farmer in our country.

As a nation we are young in agriculture, and it is natural for us to refer back to those parts of the world from which our fathers emigrated for example, to aid us in our conclusions, on many subjects connected with our pursuits in life.

In order to form correct conclusions, in matters appertaining to agriculture, many things must be taken into consideration. The difference in the climate and soil of different countries is so great, that the course of cropping pursued in one country may be altogether improper for another; and plants which are found to succeed well in one climate on particular soils, may require different soils in other climates, or may not succeed at all on any soil.

Many experiments have already been made in this country, to establish the fact, whether, or not, hedges of any kind could be substituted for our stone and wood fences. Thus far the problem remains unsolved. Various experiments have been made with different plants, by different persons, and the results and reports have tended more to confuse than establish public opinion.

In looking abroad for examples, whereon to found our opinions, we naturally refer to England, Ireland, and France, as countries where agriculture as a science is better understood than in any other with which we have much intercourse.

In England and Ireland, hedges are more extensively cultivated, we believe, than in any other agricultural country. The soil and climate of England and Ireland may be counted very similar. The soil is of a rich secondary formation, and from their limited extent and being surrounded with water, the climate is temperate and humid. In summer the temperature rarely exceeds 75°, and during winter it seldom descends lower than 25° above zero, a variation not so great as has been known in this country within a few days.

From the scarcity of timber, and the consequent high price, methods are resorted to for enclosing their fields besides fencing with wood. Whenever stone can be procured at reasonable rates, they are preferred by farmers of every country to either wood fences or hedges.

Although from the peculiarities of the climate of England they have been successful in cultivating hedges, yet in France, where the temperature may be called temperate compared with ours, they did not find it for their interest to attend to their cultivation.

In England and Ireland the plant mostly cultivated for hedges is the quickset Haw-thorn, Cratægus *oxyacanthus*, a native of Britain, and is admirably calculated for that purpose. In France, where the climate is more warm and dry, the Haw-thorn does not flourish well; insects injure it, and it becomes covered with moss, stunted, and dies.

In America, or in this section of the United States, our summers are much warmer than they are in France, and our winters more severe, and we have never seen a haw-thorn hedge with us that had that healthy appearance that they have in England, which we consider as proof positive that our climate is not as congenial to their growth as that of the country in which they are found growing spontaneously.

The first proposition to be solved by our farmers is in what manner can their fields be securely fenced for a length of time at the least expense. To answer this, all circumstances must enter into the calculation.

Allowing that it is thought advisable in any locality in our country to attempt the cultivation of hedges, then it becomes important to know what plants will succeed best in a given locality.

On inquiring into the natural location of plants, we find them in belts extending from east to west, across continents, varying from a direct line, according to the humidity and temperature of the atmosphere and the nature of the soil on which they grow.

With plants, as with animals, different species require different degrees of heat to insure health, added to which light and moisture have material influence.

On inquiring for plants suited to different locations, not only is the natural climate of the plant to be consulted, but the growth and habits of it are equally important.

The following is a list of those plants which have been recommended for hedging by different writers on the subject, together with a short description of their habits, and the country from which they have been brought or where they are found growing naturally.

THORN.—This is a common name applied to a numerous family, many of which have been used for hedging from time immemorial; as the limbs of the different kinds are more or less armed with sharp spines or thorns, they are well calculated for this purpose.

HAW-THORN—*Cratægus oxyacantha.*—This is the common hedge thorn of England. It is a native of Britain, where it grows to the height of fifteen or twenty feet, with many small limbs, which are armed with abundance of small sharp spines. It is found to be the best plant for hedging in England and Ireland that has ever been cultivated for that purpose.

EVER-GREEN THORN—*C. pyracantha.*—This is a native of the south of Europe, and has been cultivated for hedges, but is less valuable for that purpose than the preceding.

COCKSPUR THORN—*Scarlet flowering, Pear leaved, Yellow fruited,* and some others, are natives of America, are of larger growth than the hawthorn, and the limbs do not interlace as well. Most of the species of thorn are subject to be injured by insects during summer and field mice during the winter, in addition to which the stocks become in many localities covered with moss. We cannot recommend any of the above for hedges in this part of the state. They may be propagated from seed, which should be buried one year in the earth, after which they should be taken up and planted in rows as other seeds in the nursery.

HONEY LOCUST—*Gleditsohia Triacanthus.*—This is a native North American tree, found growing in the forests of the middle states, where it often attains the height of sixty feet, with a trunk proportioned to its height.

This tree has been recommended for hedging, but it is found impossible to keep it in a dwarf state. The limbs are large and not suitable for interlacing. As it is a native of the southern and middle states, it does not well endure our northern winters when young.

PRICKLY ASH—*Zanthoxylum fraxineum,* and *tricarpum.*—Both these varieties are native American shrubs growing to the height of eight or ten feet, the limbs are armed with short thorns. These shrubs spread so much by sprouting from the roots that either of them would prove very troublesome when set for hedge.

BARBERRY or BERBERRIS—*Berberris canadensis.*—This is an American shrub which infests many parts of the New-England states, growing to the height of six or eight feet, with upright stems, which are armed with slender sharp spines. Although we have long seen this shrub growing about fences, we do not recollect to have seen it treated as a hedge. From the strong prejudice there is against it, entertained by the New-England farmers, we think it would be difficult to induce them to cultivate it.

BUCK THORN—*Rhamnus catharticus.*—The English botanists claim this a native of Britain, and Professor Eaton says that it is found growing wild in New-England. From experiments made by E. H. Derby, Esq. of Massachusetts, it would appear that this is one of the most valuable plants for hedges in the northern states that has ever been tried. In this country it attains to the height of fifteen or twenty feet, the limbs are not long but thick, and are set with sharp spines. It endures the severity of our northern winters, and is not subject to be injured by insects. It is readily cultivated from seed, which are produced abundantly by old trees. [See Report of the Massachusetts Society, with Mr. Derby's communication annexed, page 15 of Appendix to New-York Farmer, for March, 1834.]

OSAGE ORANGE—*Maclura aurantica.*—This is an American shrub, found on the banks of the Arkansas and some other southern streams. The foliage is of a deep green, somewhat resembling that of the orange, and the limbs are set with sharp thorns. It does not endure our northern winters.

APPLES.—Both the common and crab apples have been tried for hedges in this latitude, but neither have succeeded so as to bear recommendation for this purpose. Like thorns, they are liable to be destroyed by insects in summer and by mice in winter.

If there is any tree or shrub that we can recommend to farmers at this time for the purpose of substituting for wood and stone fences, with hopes of being more economical, it is the *White Italian Mulberry—Morus alba.*

Professor Rafinesque, of Philadelphia, in speaking of different trees and shrubs with regard to their qualities for hedging, says, "I have left for the last this most valuable tree. It bears cutting, and is often raised in silk countries as a shrub and hedge, to collect the leaves easier. Grows with the utmost facility, lasting sixty years at least."

This tree, which is a native of China, appears perfectly naturalized in this country, or at least, coming from a country where the climate is not altogether different from our own, thrives well. It is easily cultivated, either from seed or cuttings. It grows to the height of thirty or forty

feet, and somewhat resembles our common apple in shape and size.

As it appears well established now, that the raising of silk-worms and the making of silk in this country will be attended with a corresponding profit with other farming operations, there can be no danger in cultivating mulberry hedges, as it is allowed that it is the most profitable way to raise them when intended only for worms, and if they will answer the double purpose of feeding silk-worms and as a substitute for fences, the inducements to raise them must be very great.

When it is designed to raise plants from seed, they should be sown in the fore part of May, and one ounce of seed is thought to be sufficient for raising from eight to ten thousand trees.—[Goodsell's Genesee Farmer.]

The Horse.—The following extracts are from a small book entitled "Knowledge for the People, or the Plain Why and Because."

Why is the ear of a horse so interesting a part of his anatomy?

Because it is one of the most beautiful parts about him, and even more intelligible than the eye; and an observer of the horse can tell, by the expressive motion of the ears, almost all that he thinks and means.

Why is it a good sign for a horse to carry one ear forward and the other backward, when on a journey?

Because this stretching of the ears in contrary directions shows that he is attentive to every thing that is taking place around him, and, while he is so doing, he cannot be fatigued, or likely soon to become so. Few horses sleep without pointing their ears as above, that they may receive notice of the approach of objects in every direction.

When horses or mules march in company at night, those in front direct their ears forwards; those in the centre turn them laterally or across; the whole troop seeming thus to be actuated by one feeling, which watches the general safety.—[Arnott.]

Why does the eye of a horse point a little forwards from the side of the head?

Because the animal may have a more extended field of vision.

Why does not the loss of one eye enfeeble sight?

Because the other acquires greater energy; though it much contracts the field of vision. It is said to render the conception erring, and the case of misjudgment of distance is the one commonly brought forward to show this. One-eyed horses have, however, been found extraordinary leapers.

Why is it a vulgar error to suppose wall-eyed horses not liable to blindness?

Because there is no difference of structure which can produce this exemption; but the wall-eyed horse, from this unseemly appearance, and his frequent want of breeding, may not be exposed to many of the usual causes of inflammation.

Why does the pupil of the eye expand when a horse is brought to the door of the stable?

Because it may keep out the extra quantity of light, which would be painful to the animal and injurious to vision. When opposed directly to the sun, the pupil, or aperture in the iris, will always close.

Why was the inflammation of the horse's eye formerly called "moon-blindness?"

Because of its periodical return, and some supposed influence of the moon: an absurdity which is its own contradiction.

Why are the eyes of horses kept clean?

Because, like birds, they have a kind of third eyelid, called the *haw*, moistened with a pulpy substance or mucilage, to take hold of the dust on the eye-ball, and wipe it clean; so that the eye is hardly ever seen with any thing on it, though greatly exposed from its size and posture.

Why do horses shy as they grow old?

Because of a decay in their sight; a loss of convexity in the eye, lessening the convergency of the rays, and throwing the perfect image beyond, and not on, the retina.

Why are the teeth a criterion of the horse's age?

Because the incisor or front teeth of the horse have a production of enamel in their centre; but the cavity which this forms, containing no cement, is merely filled by the particles of food, &c. As the enamel descends only to a certain extent in the tooth, the teeth disappear at last, from the constant wear of the part in mastication; and this is improperly called the filling up of the teeth.—[Blumenbach.]

Why are the grinders of the horse never perfect?

Because the tooth is not finished when it cuts the gum: the lower part of its body is complete, while the upper part is worn away by mastication, and the proper fang is not added till long after. Thus, if the part out of the gum is complete, the rest of the body is imperfect, and there are no fangs: on the contrary, when the fangs are formed, much of the body has been worn away in mastication.—[Blumenbach.]

Why has the horse the pack-wax, or a strong cord from the back of the head to the bones of the back?

Because the head hangs in a slanting position from the extremity of the neck, and the neck itself projects considerably from the chest; thus the whole weight of the head and neck is suspended from the chest, and very great power is requisite to support them. In addition to the simple weight of the head and neck, the neck projecting from the chest, and the head hanging from the extremity of the neck, act with enormous mechanical force, and require more than a hundred-fold the power necessary to support them. As an illustration, it may be observed that it requires a strong man to lift a small table from the ground at arm's length.

Why are large nostrils a perfection in hunters and running horses?

Because they afford the animals freer respiration when they are hard-ridden or run.—[G. White.]

Why are horses with white legs and feet less valuable than those which have them not?

Because, even in a wet soil and climate, white hoofs are more brittle, and more liable to accident and lameness than black ones; and in stony soils white hoofs are much more liable to break and to contract than those of a dark color.

Why is it difficult to distinguish the species of a horse from the inspection of his bones?

Because the size can scarcely be assumed as a specific character, it varying remarkably in the same species. Hence the bones of fossil horses present no precise character to distinguish them from the medium-sized existing species.

Why does a bulky heavy horse make less progress than a compact muscular animal?

Because the fat horse makes but little exertion, much of his force being expended in transporting his own overgrown mass.

Why does the speed and wind of the horse depend upon the size of the lungs?

Because in proportion to the quantity of air which they contain, and the less frequent necessity of renewing that air by breathing, will the animal be at his ease, or distressed, when violent exertion is demanded of him.

Temperance in Vine Countries.—We give the following from a notice, in the Utica Sentinel, of a temperance meeting. Some recent writers, among whom is Mr. Cooper, the novelist, deny that intemperance is less general in France than in the United States:

Dr. Dwight, of Hamilton College, followed Mr. Williams in a few forcible observations, in which he lucidly illustrated the propriety of adopting this resolution. We were unable, however, from our position, to hear all of them, and can only furnish a very brief sketch of their tenor. He knew, he said, that both fermented and distilled liquors were extensively adulterated. When in England, he had noticed in the outskirts of London, over a number of buildings, advertisements conspicuously written on their fronts, "*home brewed beer.*" From curiosity, he had gone in and inquired the reason for so singular a notice; he was informed that the beer brewed in the large breweries was so notoriously and deleteriously adulterated, that few persons could drink it without prejudice to their health. He ascertained this fact from his own experience; he found that the beer, as well as the porter, known as the "London Porter," had an injurious effect upon his health. He had never drank it without perceiving the unpleasant effects from it; he had felt the same effects from drinking beer in *this* country. It was notorious that aloes was frequently used to impart the bitter taste to the beer, and that other ingredients were used, particularly abroad, which rendered beer a most unwholesome drink. In regard to the use of wine, when drank pure and in moderate quantities, he believed it not only innocent, but highly beneficial to health. The ill effects of wine were chargeable to its adulteration; the flushed cheek, the head-ache, and the derangement of the stomach, which followed upon drinking it, were produced by the noxious ingredients infused in it—not by the wine itself. His observation, on the contrary—and it had been extensive—had supplied him with the most conclusive proof, that the *vine* countries were the most temperate. He had been four months in Italy, and in that time had seen but *three* intoxicated persons. And this too was in a population idle and dissolute—where wines and brandies were abundant, cheap, and accessible. He had observed the same thing in France. In one assemblage of two hundred thousand people, in the Champ de Mars, he had noticed but eleven people who appeared to be disguised with liquor; three of these he knew were so: of the remaining eight, he was not confident. The greatest blessing to the world, in his opinion, would be the spreading of the *vine*. The introduction of the vine would prove a most powerful auxiliary to the cause of temperance.

Good and Poor Fruit in the same Orchard.—The subjoined paragraph is from Dr. Thatcher's American Orchardist. It is generally supposed that the mixing of the farina will not effect the fruit, but the seed only—that this is the method of nature to obtain new varieties. It would be well, however, for those having opportunity, to make observation.

A precaution is suggested that apple trees bearing bad or ordinary fruit should not be suffered to grow with those which bear fruit of a superior quality. It is a fact with which gardeners are familiar, that the blossoms of cucumbers will greatly injure the flavor of melons that grow near them; and it is reasonable to suppose that fruits, while forming on the trees, are liable in like manner to suffer deterioration. The result of the following experiment would seem to strengthen the above conjecture. The experiment, it is said, has in numerous instances succeeded without a single failure. In an orchard containing a great variety of apple trees bearing sweet, and some very acrid fruit, and others partaking of both these properties, in the vernal season, when the trees are in full blossom, the pollen (or impregnating dust) was taken from one tree (for example, where the fruit is very sweet,) and deposited on the flowers of a particular branch of another tree, whose fruit is extremely acrid. The apples of that particular branch were found to combine these two properties for that season, and by this simple process, the experimentor asserts, he can easily provide himself with apples for that season perfectly to his taste, which he considers much more expeditious and equally as certain a process as that of grafting.

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When horses or mules march in company at night, those in front direct their ears forwards; those in the centre turn them laterally or across; the whole troop seeming thus to be actuated by one feeling, which watches the general safety.—[Arnott.]

Why does the eye of a horse point a little forwards from the side of the head?

Because the animal may have a more extended field of vision.

Why does not the loss of one eye enfeeble sight?

Because the other acquires greater energy; though it much contracts the field of vision. It is said to render the conception erring, and the case of misjudgment of distance is the one commonly brought forward to show this. One-eyed horses have, however, been found extraordinary leapers.

Why is it a vulgar error to suppose wall-eyed horses not liable to blindness?

Because there is no difference of structure which can produce this exemption; but the wall-eyed horse, from this unseemly appearance, and his frequent want of breeding, may not be exposed to many of the usual causes of inflammation.

Why does the pupil of the eye expand when a horse is brought to the door of the stable?

Because it may keep out the extra quantity of light, which would be painful to the animal and injurious to vision. When opposed directly to the sun, the pupil, or aperture in the iris, will always close.

Why was the inflammation of the horse's eye formerly called "moon-blindness?"

Because of its periodical return, and some supposed influence of the moon: an absurdity which is its own contradiction.

Why are the eyes of horses kept clean?

Because, like birds, they have a kind of third eyelid, called the *haw*, moistened with a pulpy substance or mucilage, to take hold of the dust on the eye-ball, and wipe it clean; so that the eye is hardly ever seen with any thing on it, though greatly exposed from its size and posture.

Why do horses shy as they grow old?

Because of a decay in their sight; a loss of convexity in the eye, lessening the convergency of the rays, and throwing the perfect image beyond, and not on, the retina.

Why are the teeth a criterion of the horse's age?

Because the incisor or front teeth of the horse have a production of enamel in their centre; but the cavity which this forms, containing no cement, is merely filled by the particles of food, &c. As the enamel descends only to a certain extent in the tooth, the teeth disappear at last, from the constant wear of the part in mastication; and this is improperly called the filling up of the teeth.—[Blumenbach.]

Why are the grinders of the horse never perfect?

Because the tooth is not finished when it cuts the gum: the lower part of its body is complete, while the upper part is worn away by mastication, and the proper fang is not added till long after. Thus, if the part out of the gum is complete, the rest of the body is imperfect, and there are no fangs: on the contrary, when the fangs are formed, much of the body has been worn away in mastication.—[Blumenbach.]

Why has the horse the pack-wax, or a strong cord from the back of the head to the bones of the back?

Because the head hangs in a slanting position from the extremity of the neck, and the neck itself projects considerably from the chest; thus the whole weight of the head and neck is suspended from the chest, and very great power is requisite to support them. In addition to the simple weight of the head and neck, the neck projecting from the chest, and the head hanging from the extremity of the neck, act with enormous mechanical force, and require more than a hundred-fold the power necessary to support them. As an illustration, it may be observed that it requires a strong man to lift a small table from the ground at arm's length.

Why are large nostrils a perfection in hunters and running horses?

Because they afford the animals freer respiration when they are hard-ridden or run.—[G. White.]

Why are horses with white legs and feet less valuable than those which have them not?

Because, even in a wet soil and climate, white hoofs are more brittle, and more liable to accident and lameness than black ones; and in stony soils white hoofs are much more liable to break and to contract than those of a dark color.

Why is it difficult to distinguish the species of a horse from the inspection of his bones?

Because the size can scarcely be assumed as a specific character, it varying remarkably in the same species. Hence the bones of fossil horses present no precise character to distinguish them from the medium-sized existing species.

Why does a bulky heavy horse make less progress than a compact muscular animal?

Because the fat horse makes but little exertion, much of his force being expended in transporting his own overgrown mass.

Why does the speed and wind of the horse depend upon the size of the lungs?

Because in proportion to the quantity of air which they contain, and the less frequent necessity of renewing that air by breathing, will the animal be at his ease, or distressed, when violent exertion is demanded of him.

Temperance in Vine Countries.—We give the following from a notice, in the Utica Sentinel, of a temperance meeting. Some recent writers, among whom is Mr. Cooper, the novelist, deny that intemperance is less general in France than in the United States:

Dr. Dwight, of Hamilton College, followed Mr. Williams in a few forcible observations, in which he lucidly illustrated the propriety of adopting this resolution. We were unable, however, from our position, to hear all of them, and can only furnish a very brief sketch of their tenor. He knew, he said, that both fermented and distilled liquors were extensively adulterated. When in England, he had noticed in the outskirts of London, over a number of buildings, advertisements conspicuously written on their fronts, "*home brewed beer.*" From curiosity, he had gone in and inquired the reason for so singular a notice; he was informed that the beer brewed in the large breweries was so notoriously and deleteriously adulterated, that few persons could drink it without prejudice to their health. He ascertained this fact from his own experience; he found that the beer, as well as the porter, known as the "London Porter," had an injurious effect upon his health. He had never drank it without perceiving the unpleasant effects from it; he had felt the same effects from drinking beer in *this* country. It was notorious that aloes was frequently used to impart the bitter taste to the beer, and that other ingredients were used, particularly abroad, which rendered beer a most unwholesome drink. In regard to the use of wine, when drank pure and in moderate quantities, he believed it not only innocent, but highly beneficial to health. The ill effects of wine were chargeable to its adulteration; the flushed cheek, the head-ache, and the derangement of the stomach, which followed upon drinking it, were produced by the noxious ingredients infused in it—not by the wine itself. His observation, on the contrary—and it had been extensive—had supplied him with the most conclusive proof, that the *vine* countries were the most temperate. He had been four months in Italy, and in that time had seen but *three* intoxicated persons. And this too was in a population idle and dissolute—where wines and brandies were abundant, cheap, and accessible. He had observed the same thing in France. In one assemblage of two hundred thousand people, in the Champ de Mars, he had noticed but eleven people who appeared to be disguised with liquor; three of these he knew were so: of the remaining eight, he was not confident. The greatest blessing to the world, in his opinion, would be the spreading of the *vine*. The introduction of the vine would prove a most powerful auxiliary to the cause of temperance.

Good and Poor Fruit in the same Orchard.—The subjoined paragraph is from Dr. Thatcher's American Orchardist. It is generally supposed that the mixing of the farina will not effect the fruit, but the seed only—that this is the method of nature to obtain new varieties. It would be well, however, for those having opportunity, to make observation.

A precaution is suggested that apple trees bearing bad or ordinary fruit should not be suffered to grow with those which bear fruit of a superior quality. It is a fact with which gardeners are familiar, that the blossoms of cucumbers will greatly injure the flavor of melons that grow near them; and it is reasonable to suppose that fruits, while forming on the trees, are liable in like manner to suffer deterioration. The result of the following experiment would seem to strengthen the above conjecture. The experiment, it is said, has in numerous instances succeeded without a single failure. In an orchard containing a great variety of apple trees bearing sweet, and some very acrid fruit, and others partaking of both these properties, in the vernal season, when the trees are in full blossom, the pollen (or impregnating dust) was taken from one tree (for example, where the fruit is very sweet,) and deposited on the flowers of a particular branch of another tree, whose fruit is extremely acrid. The apples of that particular branch were found to combine these two properties for that season, and by this simple process, the experimentor asserts, he can easily provide himself with apples for that season perfectly to his taste, which he considers much more expeditious and equally as certain a process as that of grafting.

Smoky Chimneys. By Comfort. To the Editor of the Mechanics' Magazine.

In the number of your periodical for January, there is an article headed "smoky chimneys," accompanied by rules for their cure, condensed from the works of Count Rumford.

It may be observed that the improvement in fire-places was proposed by Count Rumford with a view to economy in the article of fuel, and the suffusion through rooms of an increased quantity of heat from any given quantity of fuel. The Count, indeed, observes, that his plan of a fire-place will often act as a cure to smoky chimneys, but his chief object was economy in fuel, and his experiments had this as their chief, if not their sole object.

The result of his studies, scientific and operative, led to the conclusion, in his mind, that four inches is the proper width for the throat of chimneys, and this will probably be found applicable to as many, or to more cases, than any other, which, as a general standard, could be adopted. It will not, however, be equally applicable to all cases, nor will any general rule, in this respect, apply universally.

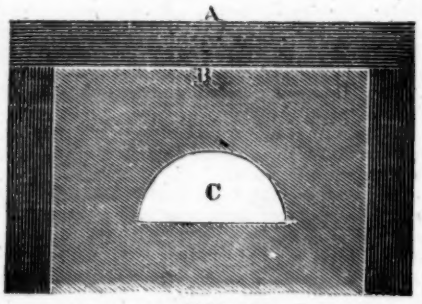
The proper width of the throat of a chimney is the least which will admit all the smoke, together with the quantity of rarified air necessary to aid its escape through the chimney. This must be regulated by circumstances, and chiefly by the material of the fuel. Anthracite coal, producing little smoke, would require a throat even narrower than four inches. Coal, of the quality of the Sydney, producing a large volume of smoke, might perhaps require a width of throat exceeding four inches.

The reasonableness of thus narrowing the throat of the chimney for the purpose of yielding an increased heat to the room, will, upon the least reflection, be sufficiently obvious. The smoke, if not impeded by some obstruction, will naturally ascend through the chimney; the heat of the fire, from its affinity to smoke, will ascend with it. Should the volume of air constantly rushing into the room find an over-easy passage through the chimney, the entire, or very nearly the entire, of the heat will escape with it; hence the fact, that persons sitting in a room, in presence of a large fire, often suffer from cold, and even in a degree greater than they would were there neither fire nor fire-place in the room.

A chimney may, however, be so narrow in some part of it, or throughout the whole, that it will not admit all the smoke, a part of which will, in such case, in search of a new channel of escape, make its way into the room. A similar effect will be produced when the chimney is so injudiciously constructed that the smoke cannot escape through it with the required ease and rapidity. A chimney may be so placed in relation to another chimney within the same building, as to cause it to smoke. These different causes of smoky chimneys may require very different remedies. Count Rumford's plan of narrowing the throat of a chimney will often effect a cure, but surely not universally. I propose herein to offer a remedy, which, although not proposed as an universal panacea, will, it is presumed, effect a cure in the majority of cases of smoky chimneys.

It is generally known that by lowering the mantle-piece the draft is increased, and the smoky chimney thus partially or fully cured; but it is also known that this mode will, by increasing the draft, lessen the quantity of heat in the room, and that warmth is in this way dispensed with, to avoid the annoyance of smoke. A plan which would yield the advantage of a lowered mantle without its disadvantages would be a desideratum. This is, perhaps, not to the full desirable extent practicable; it is certainly practicable to a considerable extent. It may be introduced in aid of the Count's plan, where that fails, as a remedy for smoky chimneys, or it may be adopted in cases where mere economy is not an object, or where it would be inconvenient to resort to the Count's plan.

On reference to the cut No. 2, in your Magazine of January, it will be seen, that in order to reduce the throat of the chimney, there is a false back. This is made of solid work, and is extended about six inches above the breast of the chimney, where the width of four inches is acquired, and is that part distinguished as the *throat*. We may suppose this false back to be in thickness equal to the length of a common brick, say eight inches. If made of the breadth of a brick, there would be a vacant space of four inches between the false and the real back. By turning an arch in the false back, or by an aperture of any other shape, there might be left an opening for the admission of smoke and air into the vacant space between the



A, chimney-piece—B, false back—C, aperture.

backs. This would produce all the effect of a lowered mantle, without producing all the inconvenience. The portion of inconvenience which it might produce would be entirely provided against by a metal casting fitted to the arch-way, and supplied with a door, to be closed or opened as occasion might require.

This contrivance would most probably relieve the occupants of houses, in nine cases out of ten, from the annoyance of smoky chimneys, and from the heavy charges of the chimney doctor. Comfort.

Attack of Wild Elephants on a Granary.—A small body of seapoys stationed at an outpost to protect a granary, containing a large quantity of rice, was suddenly removed, in order to quiet some unruly villagers, a few miles distant, who had set the authorities at defiance. Two of our party happened to be on the spot at the moment. No sooner had the seapoys withdrawn, than a herd of wild elephants, which had long been noticed in the neighborhood, made their appearance in front of the granary. They had been preceded by a scout, which returned to the herd, and having no doubt satisfied them, in a language which to them needed no interpreter, that the coast was clear, they advanced at a brisk pace towards the building. When they arrived within a few yards of it, quite in martial order, they made a sudden stand, and began deliberately to reconnoitre the object of their attack. Nothing could be more wary and methodical than their proceedings. The walls of the granary were of solid brick work, very thick, and the only opening into the building was in the centre of the terraced roof, to which the ascent was by a ladder. On the approach of the elephants, the two astonished spectators clambered up into a lofty banyan tree, in order to escape mischief. The conduct of the four-footed besiegers was such as strongly to excite their curiosity, and they therefore watched their proceedings with intense anxiety. The two spectators were so completely screened by the foliage of the tree to which they had resorted for safety, that they could not be perceived by the elephants, though they could see very well, through the little vistas formed by the separated branches, what was going on below. Had there been a door in the granary, all difficulty in obtaining an entrance would have vanished; but four thick brick walls were obstacles which seemed at once to defy both the strength and sagacity of these dumb robbers. Nothing daunted by the magnitude of the difficulty which they had to surmount, they successively began their operations at the angles of the building. A large male elephant, with tusks of immense proportions, labored for some time to make an impression, but after a while his strength was exhausted and he retired. The next in size and strength then advanced, and exhausted his exertions with no better success. A third then came forward, and applying those tremendous levers with which his jaws were armed, and which he wielded with such prodigious might, he at length succeeded in dislodging a brick. An opening once made, other elephants advanced, when an entrance was soon obtained sufficiently large to admit the determined marauders. As the whole herd could not be accommodated at once, they divided into small bodies of three or four. One of these entered, and when they had taken their fill they retired, and their places were immediately supplied by the next in waiting, until the whole herd, upwards of twenty in number, had made a full meal. By this time a shrill sound was heard from one of the elephants, which was readily understood, when those that were still in the building immediately rushed out and joined their companions. One of the first division, after retiring from the granary, had acted as sentinel while the rest were enjoying the fruits of their sagacity and perseverance. He had so stationed himself as to be enabled to observe the advance of an enemy from any quarter, and upon perceiving the troops as they returned from the village, he sounded the signal of retreat, when the whole herd, flourishing their trunks, moved rapidly into the jungle.—[Oriental Annual.

Extraordinary Longevity of an Extraordinary Sheep.—On Saturday last, a wether sheep, of the Anglesey breed, was slaughtered at the Marquis of Westminster's farmyard, at Eaton Hall, near Chester. This remarkable animal, for many years past familiarly called "poor old Ned," was yeaned in January, 1811; consequently, if his days had not been relentlessly cut short by the farming steward, Mr. Alexander M'Gregor, he would be twenty-three years old next January! He was shown, as a great curiosity, among the extra stock at the annual meeting of the Flintshire Agricultural Society last year; and was always remarkably healthy until a few days before he was killed. The great age and continued good health of this patriarch of the lawns and meadows may possibly, in some measure, be attributable to the fact of his having never troubled himself about the concerns of the other members of the flock; he "regarded not the voice of the charmer, charm *she* never wisely;" and invariably "turned a deaf ear" to all the calumnies, broils,

and turmoils, of the world around him. It is a very singular fact, that this remarkable animal had not only no ears, but no orifice where the ears are usually posited. A few days before he was slaughtered he was attacked with water on the brain, or "the turn," as it is commonly called, for which we believe there is no cure but the butcher's knife. The intestines exhibited a perfectly healthy appearance, and the color of the mutton was as good as in sheep three or four years old.—[London Farmer's Magazine.]

Improvement of Wool.—How far the farmers of this country may find the following article, from the London Farmer's Magazine, serviceable to them, we are unable to say; but it strikes us that the salve recommended would be beneficial to sheep, if applied after they are sheared.

Mr. Editor,—From the increasing demand for white wool, many of the store farmers of this country have of late years allowed their flocks, even in high and exposed situations, to winter without a salving of any description whatever. This practice, except in some very peculiar situations, can seldom with propriety be continued above a year or two, as under this treatment both the quantity and quality of the wool invariably fall off, and seldom fails to produce a *hemphy* fleece, or, in other words, the wool gets imbedded with dead white hairs, which renders it only fit to be applied to inferior purposes, and thereby materially reduces the value of the fleece. Various salving mixtures have been recommended and adopted, but in few instances have any of them met with the approbation of the manufacturer; and when it so happens that the wool has been so heavily laid that it cannot be submitted to the process of manufacture without being previously scoured, much labor and expense are thereby incurred, and consequently the price of the wool considerably increased. Wool after having been scoured is much more liable to get discolored during the manufacturing process, and ultimately an article of less purity in color than goods which have been produced from the material as shorn from the sheep's back. Some wool growers, with anxiety to produce a fleece in a very slight degree removed from that which has been allowed to remain perfectly free of any salving whatever, have applied a greasing of animal or vegetable oil, but without the necessary precaution of adding a slight proportion of the refined spirit of tar, consequently the wool is of a yellow tinge, which renders it in a great measure unfit for the manufacture of white goods, and therefore a very considerable depreciation may be said to have taken place on the value of the material, in consequence of the injudicious application of oiling. Several of the most extensive sheep farmers in Peebles-shire, some of them indeed in the very highest and most exposed situations in the county, have for the last two years salved their flocks with powdered crude white arsenic and black soap, in the proportion of one pound of arsenic to three of soap, which are mixed up with seventy bottles of water, and this is considered sufficient for three score and ten sheep, being at the rate of a bottle for each, the expense of which does not exceed sevenpence a score. Of all salvings hitherto used in this county for the producing of white wool, this is allowed to be decidedly the best. The moment it is applied, all vermin of whatever description die instantly, and are never again to be found upon sheep which are salved with this composition; and it is the opinion of some of the most experienced in sheep farming, that stock under this treatment will in a very great measure be exempted from the louping-ill, a disease which kills thousands annually. From the nature and properties of the composition, many of the diseases which unsalved flocks are liable to be infected with, are at once eradicated or prevented by the application of this salve, which also destroys all inclination for rubbing against foggy or grassy banks, and thereby prevents the wool from getting imbedded with impurities, which are not unfrequently found to such an extent, that the wages of the laborer in picking it sufficiently adds so much to the price, that too often the manufacturer is obliged to apply it to an inferior purpose; and even when the material has been carefully looked over by the most discerning eye, previous to its being submitted to the process of manufacture, it frequently happens that thousands of these impurities make their appearance in the finished article, which in a great measure renders it unfit for the purposes for which it was intended. Sheep salved in this manner are seldom or never found to die in consequence of falling kwald, or the wool to pell or fall off previous to clipping time. However, in place of soap and water, I would with much confidence recommend that the arsenic should be mixed with butter and cocoanut oil, and only to that extent which is necessary to give fixity to the arsenic, which, with a slight addition of the refined spirit of tar, is a salve which I have no hesitation in pronouncing is calculated to produce wool of the purest possible description. Under this treatment the fleece will not only be considerably finer, but very materially increased in quantity, independent of any additional weight that may be added by the application of the butter and cocoanut oil, and will be found to possess in a much greater degree the felting properties; consequently much more valuable as a clothing wool, or indeed for the manufacture of any description of goods to which the material can possibly be applied. Wool salved with this composition is also admirably adapted for mixing with skin wool, which has been removed from the pelt by the application of lime; and it is a well known fact, that when manufactured by itself, it is extremely liable to gild or get discolored during the hot days of the summer. After the necessary process of oiling has been performed, a very slight admixture of the salve material acts as a complete security against the skin wool getting discolored in the least degree, throughout all the various stages of manufacture; and even in scouring, the quantity of soap generally required would be considerably reduced by adopting the mixing system here recommended.

Your giving a place to the above in your paper will oblige your most obed't serv't, X.

The Meat of Diseased Cattle.—An investigation of an interesting character has recently engaged the attention of the faculty in Paris. In consequence of the supposed custom among the butchers, of exposing for sale the flesh of animals that had died of various diseases, it was determined by the government to ascertain, if possible, what diseases, in animals intended for the butcher, are capable of communicating to their meat deleterious qualities. The result of the inquiry, which was pursued with great diligence, was, that only one of the diseases of cattle possesses a contagion for the human subject, that is not destroyed by the process of cookery: this disease is *malignant pustule*. Vast numbers of cattle, it appeared, were constantly sold for slaughter while laboring under other complaints, but no authenticated case could be discovered in which harm had resulted from the use of their meat. Thousands even of the cattle slaughtered while laboring under the contagious typhus that prevailed among them so extensively in 1814, 1815, and 1816, were used as food without any discoverable injury. Singular as this fact may seem, it appears to be well established by this investigation.

On the whole, the conclusion drawn in the report is, that butcher's meat is deleterious to man in two conditions—1st, When spoiled by too long keeping; and 2d, When the animals slaughtered were affected with malignant pustule.

Although the process of cooking may prevent any injurious consequences from the eating of a diseased animal, yet it is very unpleasant to know the fact that the beef on our table is from cattle sick with typhus, with liver complaint, with inflammation of the lungs, and many of the disorders incidental to such animals, and the only dependance is on the integrity of the butchers, who will not give such meat to their customers, knowing it to be diseased. One great advantage which the Mosaic law and Rabbinical institutions have over all modern customs, is blending religious with political regulations, purifying both soul and body at the same time. The beef exposed in our markets with leaden seals must necessarily be free from all or nearly all the impurities in cattle complained of above. An experienced person, who has studied the anatomy of the beast, is commissioned and paid by the congregation to kill all kinds of butcher's meat. The animal is not stunned with blows, producing stagnation and congestion of the blood; the throat is cut with a remarkably sharp knife, and all the veins and arteries are emptied; the lungs are searched with the hand; if the liver is attached to the ribs, or there are impurities, malformation, or any apparent disease, it is condemned, and the leaden seals are not attached to the meat. It is thus that the observance of ancient laws by this ancient people give them great protection against feeding on diseased animals, and our old New-Yorkers, of all religious denominations, who understand the object, generally give a preference to the meat with leaden seals.

Canker Worm.—Dr. Thatcher, of Plymouth, (Mass.) favorably known abroad as a writer, and at times as an eminent surgeon, concludes some agricultural remarks in the Plymouth Memorial of last week with the following piece of information, which may be of service to many of our readers:

That voracious reptile, the canker worm, has proved very destructive to many orchards in this vicinity the last summer, notwithstanding the free application of tar. Major S. Frazer, a skilful agriculturist of Duxbury, has invented a composition which proves a more effectual remedy against the canker worm than any other which has been before known. It consists of soft soap, whale oil, and common varnish, in equal parts. This is easily applied with a brush, and when repeated occasionally, as it becomes dry, proves very effectual, and is not like tar injurious to trees. The same composition would probably serve as a protection against the apple tree borer, if applied at the proper season; and also in protecting peach trees from the attack of the fly which deposites her eggs in the bark near the root, from which proceeds the peach tree worm. I have applied it to my young peach trees the past summer, and have no doubt of its utility, as no insect will encounter the odor and tenacity of this substance. In fact, the Frazer Compound is, in my opinion, to be considered a valuable acquisition to our remedies against the annoyance of insects. Peach trees have not in general succeeded well in this place; the cold east winds from our sea-board have a fatal effect on the buds in the spring. I have now adopted an expedient which, I hope, will in some measure remedy this evil. I have surrounded the trees near the roots with a bed of sea weed, which I conceive will preserve the roots both from the effects of excessive frost during the winter, and the influence of the vernal sun raising the sap into action too early in the season. The sea weed will, I think, retard the rising of the sap, and, of course, the developement of the buds, several days later, and the tree will besides derive beneficial effects from the alka with which the article is impregnated.

James Thatcher.

Plymouth, Nov. 12, 1833.

[From the Mechanics' Magazine for February.]

ERICSSON'S CALORIC ENGINE.—In our number for December we promised a description of Mr. Ericsson's Caloric Engine as soon as it could be procured. We have much satisfaction in being thus early able to redeem that pledge. The following is from the London Mechanics' Magazine:

The susceptibility for heat, possessed by gaseous and fluid bodies, is known to be nearly unlimited. Neither density nor pressure seems to exercise the smallest counteracting influence. The densest medium will take up a given quantity of heat with as much facility as the rarest; and when two mediums of unequal temperatures are brought in contact, they become equalized immediately, no matter how different their densities may be.

We have now to direct the attention of our readers to a mode of applying these physical truths to the production of mechanical power, which seems to us to be not only decidedly novel, but to be fraught with results of the greatest public importance.

We allude to the patent recently taken out by Mr. Ericsson, for what he calls his "Caloric Engine." The grand feature by which this engine is distinguished from the steam engine, and all other power machines, is this, that the same given quantity of heat which sets it in motion is used over and over again to keep up that motion, and that no additional supply is wanted beyond what is requisite to compensate for a small loss incurred by escape and radiation.

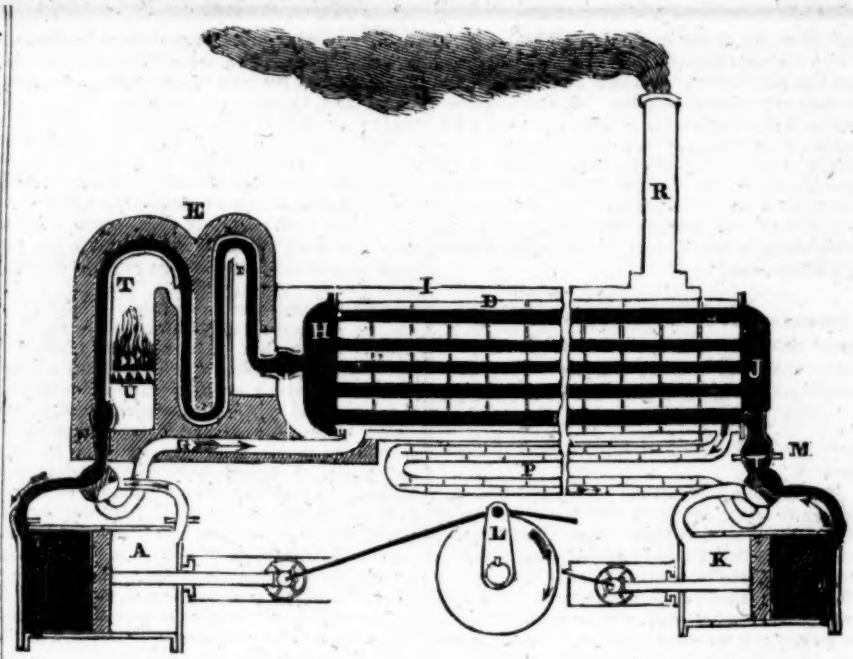
We have seen, as well as hundreds of others, during the past week, an engine constructed on this plan actually at work, and can bear our personal testimony to its working as powerfully and equably as any steam engine could do.

The engine which we saw at work is, in all external respects, saving only the small space which it occupies, exactly similar to a high pressure steam engine. It is calculated to be of five horse power. There are two cylinders: one called the cold cylinder, 10¼ inches in diameter, and the other the working cylinder, 14 inches in diameter, both with an 18 inch stroke. The engine was worked under a pressure of 35 lbs. to the square inch, and its power checked by a break, loaded with 4,000 lbs., acting on the circumference of a wheel of 2 feet diameter.

The circulating medium employed in this engine is simply atmospheric air; but of course that or any other fluid medium may be employed with equal facility for the purpose of using the heat over and over again—some perhaps with much greater facility.

To describe the interior arrangements, by which motion is given to the engine, would lead us into a multiplicity of details, not at all necessary for the comprehension of the principle of its action. All that is needful for this purpose the reader will find in the simplified diagramatic arrangement exhibited in the prefixed engraving.

D D is a cylindrical vessel termed the "regenerator," which, in the actual engine, is 7 feet 6 inches long, and 8½ inches in diameter, fitted with small tubes, which pass through both ends, and terminate in the caps H and J. It also contains a number of division plates, through which these tubes pass, and which plates have segments cut out alternately from their tops and bottoms. The tubes themselves likewise contain a number



of small divisions, tapering off towards the centre, each placed in an opposite direction to the other. T T is one of a series of bent tubes, inclosed in a stove, E, and acted upon by the fire, U, the combustion being supported by the draft produced by a chimney, R. The pipes in the stove are all connected with two larger pipes, the one of which communicates with the cap, H, and the other, as shown by the diagram, communicates with a four-way cock, attached to the passage-pieces of a cylinder, A, which is the working cylinder of the engine. P represents one or more pipes, exposed to some cooling medium, and is termed the "cooler;" it contains also a number of division plates, similar to those in the tubes of the regenerator, as also with the four-way cock attached to the cylinder K.

The whole of the apparatus, namely, the body of the regenerator, its tubes, the caps H and J, the pipes in the stove, the cooler P, pipe G, and the two cylinders, with their passage-pieces, we will now suppose to be all charged with common air, or any other æriform substance. We will suppose also that the portion of that air which is marked black in the diagram is kept under greater pressure or more compressed than the rest, which is left blank. Let us suppose farther, that the air which the cylinder A, the stove pipes T, the cap H, and the pipe G, contain, is raised to some considerable temperature, and that the air contained in the body, as well as the air in the tubes of the regenerator, is nearly of the same temperature of that nearest to the cap H, gradually lessening towards the cap J, so as to be there of an equal temperature with the surrounding atmosphere. Now, since that portion of the air contained in the apparatus which is marked black has been changed to a greater pressure than the rest, and as the cylinder A, with its piston, is larger than the cylinder K, with its piston, it follows that motion must be produced in the direction shown by the arrow marked on the crank L.

The force thus exerted will, of course, depend on the difference of the areas of the pistons, and on the difference in pressure given to the circulating medium. It is evident that the hot air, which, by the motion of the piston, must escape from the cylinder A through the pipe G, will, in its winding passage through the body of the regenerator towards the cooler P, give out its heat to the cold air forced from the cylinder K, the particles of the latter being also in a constant state of change in passing through the tubes towards the stove pipes. The pistons having performed the full stroke, the two four-way cocks are then reversed, when a retrograde action takes place; the motion of the opposite currents in the regenerator still continuing the same as before. A constant motion will thus be produced, and a constant transfer of heat kept up. The object of the cooler P is to abstract the heat, which, on account of the different capacities for heat of the two currents, is not taken up in the regenerator, and the object of the stove is to supply the heat thus carried away, as well as to compensate for losses by radiation, and to raise the temperature at the commencement.

It need hardly be stated that the lesser volume of air coming from the cold cylinder fills the larger space in the hot cylinder, because it gets heated in passing through the regenerator and through the stove; while on the other hand, the larger escaping volume from the hot cylinder finds room in the lesser space of the cold cylinder, because it parts with its heat before getting there.

By charging the apparatus, the circulating medium may, of course, be kept under any desirable pressure, and thus the power of the engine varied at pleasure. High pressure will naturally produce the greatest proportionate effect, the loss by radiation being the same under whatever pressure.

We were anxious to satisfy ourselves as to the equality of the action of the engine, and with this view timed it repeatedly: the number of strokes was regularly 56 per minute.

The total consumption of fuel, when the engine is working at this rate, is stated to be no more than two pounds per horse power in the hour; and the entire loss of heat incurred by the transferring process (that is, the whole heat carried away by the cooler,) is

estimated not to exceed the product of 3 lbs. of fuel per hour. That the fuel required is not even less than two pounds, is solely owing to the great radiating surfaces unavoidable in an engine on a small scale, and to these radiating surfaces not having in the trial engine been covered by any non-conducting substances.

Mr. Ericsson has published a pamphlet explanatory of the principle and construction of his caloric engine. We extract from it the following additional information:

"By keeping the pipes in the regenerator so charged with air as to support a column of mercury 56 inches high, the greatest effect is produced in the trial engine. By the manner in which the side-valves are worked, the pressure in the body of the regenerator always adjusts itself, so as to support a column of mercury 18 inches high; so that an effective pressure, equal to 38 inches of mercury, is kept up. A break, well oiled and loaded, with 5,000 lbs. weight acting on the circumference of a wheel of two feet diameter, fixed on the fly wheel shaft, will at the above pressure keep the speed of the engine at 55 revolutions per minute. At this speed, 176 cubic feet of heated air, of a mean pressure of 17 lbs. to the square inch, are admitted into the working cylinder per minute, thereby exerting a force equal to 431,970 lbs. moved through the space of one foot: thus $\frac{431,970}{33,000} = 13$ horses' power are communicated to the main crank of the engine. The estimating this power is, however, of no other use than to give an idea of the amount of friction to which the crank-engine is subjected. In the same space of time, or a minute, 94·6 cubic feet of cold air, of a mean resistance of 14 lbs. to the square inch, are forced or put into circulation by the cold cylinder, and equal to a resistance of 190,575 lbs. moved through the space of one foot. This amount, divided by 33,000, will give 5·7 horses' power required to work the cold cylinder—hence the two cranks give and receive the power of upwards of 18 horses. By communicating the power of the hot cylinder to the cold cylinder in a direct manner, the available power, setting frictions aside, would be 431,970—190,575=241,395 lbs. moved through the space of one foot. This is equal to $\frac{241,395}{33,000} = 7{\cdot}3$ horses' power—deducting 2·3 horses for frictions would leave 5 horses. On these grounds the trial engine has been estimated at 5 horses' power. The transferring process has succeeded to such an extent, that out of the 10 lbs. of fuel which the engine consumes per hour, the product of heat from 3 lbs. of fuel only are wasted or carried away by the cooler. This important fact has been ascertained by immersing the cooler in a cistern containing precisely 1081 lbs. of water, and by observing the elevation of temperature after an hour's work of the engine; and the increase of temperature in that time is not quite 20 degrees—one pound's weight of fuel being capable of raising the temperature of 9,000 lbs. of water, it follows that the 1081 lbs. contained in the cistern would be raised 8·3 degrees by the combustion of 1 lb. of fuel, and hence that the actual increase of 20 degrees of temperature is effected by the combustion of less than 3 lbs. of fuel. The great discrepancy between the quantity of fuel thus wasted, and that actually consumed by the engine, must be accounted for by the fact, that a considerable extent of radiating surfaces are exposed to the cooling influence of the atmosphere without being surrounded by any imperfect conductors."

MANKIND MUTUALLY DEPENDANT.

Not only the correct and excellent sentiments, and the accomplished expression of the following communication, but the source from which it emanated, give it a value for our p per. It is one among numerous compositions furnished by the Ladies' Composition Class of the Boston Wesleyan Lyceum. This piece, like many others which have been prepared by this class, does credit to the intellect and still more to the heart of the author The sentiment and spirit manifested are those of christian kindness: and if believed and practised by the whole human family, would light up our depraved and forlorn world with the brightness of pure felicity. Who is not ready to try the experiment?

The cold-hearted stoic may boastingly accede to the sentiment, that 'man is sufficient for himself;' but the philanthropist rejoices in the beautiful system of mutual dependance which unites him so closely with the whole human family. He views with pleasure the facilities which the genius of men has supplied for communication with other lands; for contributing to the necessities, convenience and ease of each other, by exchanging the products of different climes; he considers all men as the children of one Parent, improving the advantages with which they are favored, for the benefit of themselves and of their brethren.

Not only do these pleasurable feelings arise in the breast of him whose heart is deeply imbued with love for the whole human race, but a little reflection will excite them in the mind of one whose views are more selfish and contracted; and constrain him to acknowledge the wisdom of a system for the division of labor, and for the promotion of friendly intercourse, which mankind, as it were by mutual consent, have so universally adopted.

Every vocation in life depends on many others for its support. The agriculturists of New-England, said to be the most independent class of people, may be adduced as examples in favor of this assertion; the toils of the blacksmith, the carpenter, &c. are all put in requisition to enable them to cultivate the soil to advantage.

The rich are dependant on the poorer classes, and the poorer classes on the wealthy: without the former, commerce and manufactures would languish—and deprived of the latter, the fatigues of manual labor would be added to those mental vexations from which the affluent are seldom exempt.

The young look to their superiors in years for counsel and instruction, and the aged to the vigor of youth and manhood for support.

A mutual dependance exists between the inhabitants of one clime and those of another; the wealth of one nation is comprised in its mines of silver and gold, that of another in the products of its soil. Those who depend on the latter may be considered as peculiarly favored; for where the former exist, those arts which constitute the happiness and prosperity of a people are almost invariably neglected. From this circumstance, indolent habits, both of body and mind, are induced, and these in their turn generate many vices.

To the conquests of the Spanish in America, may be attributed the low state of morals, literature, and science, which prevails among them; for finding that they had acquired, with an extensive territory, a resource for the supply of all their wants, the natural advantages of their natal land were disregarded.

The advantages occurring from this system of mutual dependance are many; the division of labor, or the devotion of every man's talent to some particular trade or profession, is an economy, not only of time, but of health and of money.

Should one man engage in the pursuits which are now apportioned among many, much time would be lost in the acquisition of knowledge in various branches; his health would be impaired from the attention bestowed on them; his gain would not be in ratio to the expenses incurred; and no opportunity would be afforded of attaining to perfection in any.

From the consideration that we are continually reciprocating favors with our fellow beings, and that there are none so humble as not to be able to render us assistance in one way or another, we should be excited to kindness and humility; under the influence of so beneficent a system, the asperities of life should lose their keenness, and all the social feelings of our nature be expanded. M. O.

FRIENDSHIP.—"When fortune smiles, and life is prosperous and fair, then it is that the nominal and true friend may seem alike sincere." Then it is that small and great, rich and poor, bond and free, bow at your shrine and prostrate themselves as it were at your feet. But when unfortunately the dark clouds of sorrow and disappointment gather thick around you, and you find yourself beset with troubles, losses, crosses, and disappointments, on every side, then you are ready to exclaim, "Fortune can create friends, but adversity alone can try them." Your friends of fortune will desert you. They will laugh at your misfortunes, and heap upon you shame and disgrace. They will sink you, if possible, lower, in point of honor and reputation, and in all your attempts to rise, cross and blight you at every turn.

But not so with the true friend. Though all your earthly prospects are cut off, he will not desert you, but if possible administer to your relief. Let us, therefore, cultivate and cherish that friendship, and that alone which will not diminish, though sorrows oppress and afflictions invade us: that too which will cheer and animate us amid our darkest hours and shine brightest in affliction's night.—[Monthly Repository.]

COMPRESSION OF WATER.—Mr. Jacob Perkins has invented an apparatus, which, by hydrostatic pressure, compresses water to an extent equal to a fourteenth part of its volume. The force employed is equivalent to a pressure of 30,000 lbs. to the square inch, and is applicable to other fluids. In most of our works on natural philosophy, water is treated as incompressible and non-elastic; by this apparatus the opposite of these two propositions is clearly shown. There was a considerable difficulty in getting a vessel capable of resisting so high a pressure; and the chief feature of this instrument is the manner of constructing the cylinder, which is formed of a series of concentric tubes: thus the inner or smaller tube is first formed by welding, and is turned accurately on the outer surface; the next tube is then formed, and is accurately turned on the inner surface, and the bore of this second or outer tube is just too small to receive the first tube, but, in order that it may do so, it is heated, till, by expansion, it is capable of receiving the first tube within it, and in cooling, the second tube shrinks on the first tube and strongly embraces them together; a third tube, a fourth, and so on, are similarly put on, till a cylinder is produced capable of withstanding any pressure.—[Repertory of Patent Inventions.]

Field Culture of Peas.—Mr. Goodsell:—Although peas are not extensively cultivated as a field crop, expressly for their own produce, in this section of our country, yet they are often sown as a fallow crop, and are thought by many, under certain circumstances, to be preferable to summer fallows in preparing lands for producing the staple of our country.

Within a few years there has been a great change in the practice of preparing land for wheat, and now, unless where the land is foul, fallow crops are preferred to summer fallows, as they are succeeded by equally fair crops, without exhausting the strength of the land as much in proportion to the produce.

For this purpose few summer crops are better calculated than peas. From the great extent of surface presented by their leaves, they are supposed to receive a very great proportion of their substance from the atmosphere, at the same time they protect the surface from the direct influence of the sun, and retard the decomposition of vegetable matter contained within the soil.

I believe all the peas at present cultivated with us, either as garden or field crops, are varieties of the same species, and all capable of thriving under the same cultivation. In speaking of the different varieties, it is very common to hear people say, such a variety are *garden* peas, and others are *field* peas. The impression that there is a difference between garden and field varieties often prevents people from sowing the more valuable varieties, because they have seen them growing in a garden, or have heard them called garden peas. It is true that some peas, as the grey rouncival, and knight's tall marrows, with such a length of vine that it is doubtful whether they should produce as well if not supported by poles, as in garden culture, but all those varieties with moderately long vines, may be as well grown in the field as in the garden.

Whether peas are intended for garden or field culture, they may be divided into two kinds, early and late. Early peas are small, and only prized for their precocity, as they are not as fine for eating as some of the larger and later varieties. Among the best of our early varieties, are the early Charlton or Frame peas, the Washington and June peas, with several others in which there is hardly difference enough to make them distinct varieties: all names for a small round yellow variety which succeeds perfectly as well when sowed in the field at broadcast as when sowed in drills. There would be many things in favor of sowing these early varieties in fields instead of a small late pea which is often grown; they might be sown later in the season, and yet ripen soon enough to be harvested before the time for sowing wheat. Besides the varieties mentioned, there are several which are termed *dwarf* peas on account of their low growth, as their vines do not exceed one foot or eighteen inches in height, and when raised in the garden they do not require bushing. Bishop's dwarf prolific and the dwarf Spanish are considered the best of the dwarf varieties. The more common varieties for field crops in this vicinity are marrow-fat peas. They are double the size of the early or dwarf varieties, and grow to the height of four or five feet when supported with bushes or poles. Of these there are three varieties, two of yellow, one of which has a black eye, the other has not, and the other of a pale green color. The two yellow varieties are considered as the most prolific, and are somewhat earlier than the green. They are also preferred for cooking when green, but the other surpasses them for cooking when dry, and is altogether preferred for splitting. The green peas are not as subject to be injured by bugs as the yellow, when sown at the same time, but were the yellow varieties sown later, so as to ripen at the same time with the green, they would also escape.

When peas are to be sown as a preparatory crop, the ground, if smooth, should be turned over as smooth as possible, and the seed covered with the harrow, or it may be rolled, after which a light plough may be used to cover the seed without disturbing the first furrows.

Those who wish to carry their peas to market must be particular as to the time of sowing, in order to keep them free from bugs. In this vicinity, the yellow marrow-fat peas, should not be sown until the tenth of June, but the green may be sown by the middle of May without danger.

The quantity of seed sown upon an acre should be governed by the size of the pea, and the length of the vine—from two and a half to three bushels per acre, of the marrow-fat varieties, are commonly used. The quantity produced is quite variable; in some instances forty bushels per acre have been harvested, while at others not more than ten bushels have been produced. The price of peas is also more variable than most kinds of produce, in Rochester market, varying from fifty cents to one dollar per bushel. Livingston.—[Goodsell's Genesee Farmer.]

How to make the most of a little Land.—In the spring of 1830, I purchased in this city a house and lot; the lot was fifty by one hundred and twenty feet. One third of the lot was covered by the building. When I purchased, there was not a tree, shrub or plant, on the premises, notwithstanding the house had been constantly occupied for near forty years. I planted the first tree in the spring of 1831. I at that time planted three peach and three gage trees. One of the peach and the three gage trees bore fruit the past season. I have since added three more peach, four choice plum, one choice cherry, one quince, and four choice pear trees, which bid fair to bear fruit soon. I have also three fine grape vines, that will probably bear plentifully next season, judging from their size. I have also about a dozen smaller vines. I raised on the same ground the past season, cucumbers, beets, sallads, citron melons, and nasturtiums, in great abundance for family use and for pickling. I also had a great abundance of cabbage, both for summer and winter use. In addition to the above, I have at least fifty flowering shrubs and bushes, such as roses, syringoes, altheas, lilacs, snowballs, rose acacias, flowering almonds, cape jasmines, &c. &c., with a plenty of the honeysuckle. I have at least two thousand bulbous roots, such as hyacinths, tulips, crocuses, narcissus, &c., with equal that number of annual and biennial plants and flowers, and all of the aforementioned luxuries and necessaries are enjoyed from the spot of ground that has laid waste for so great a length of time. There is still another item of profit to be added to the foregoing list: nine-tenths of the labor of cultivation has been performed with my own hands, morning and evening, when not engaged in my own regular business, unquestionably affording me a greater degree of health, and certainly a far greater degree of pleasure, than I should otherwise have enjoyed. I have also a lot in the rear of the above-mentioned, twenty-five by one hundred and twenty feet, on which there is a barn, cow-shed, and pig-stye, covering forty by twenty-five feet, leaving eighty by twenty-five feet for cultivation. Around this I have a border of two feet wide, one fourth of which is occupied by currant bushes, one fourth by raspberry, one fourth as an asparagus bed, and one fourth for spinnage, for a cabbage plant bed, for early lettuce, &c. The centre is laid out in three squares of seventeen by twenty-three feet. The first square I plant with early potatoes, the second with Lima beans, and the third with sweet corn; of the two latter, I have a great supply for my family, and some for my neighbors. Potatoes we have of the finest kind, and in great abundance through the summer season. Last fall we put about four bushels in the cellar from the same patch. We were in the summer nine in family, in the winter eight. The edge of my border I planted with bush beans; and I do not recollect that I paid a single cent for vegetables, except for the articles of green peas, and a few carrots and parsnips, the latter two of which I did not have of my own in consequence of sowing bad seed. I give you the above statement of facts, with the hope that if you should think them worth publishing, some one person may be induced to try the experiment, when he will learn that it will not only afford him a source of profit, but one of great pleasure, to grow his own vegetables; and that, while by beautifying his yard, he is not only adding to his health and comforts, but, in most cases, adding very much to the value of his property.—M. Hudson, Feb, 7, 1834.—[Gen. Far.]

Cattle—their Food in the West.—We met, to-day, several large droves of fat cattle, on their way to an eastern market; some of them going as far as New-York. They are collected in Illinois, Indiana, and Ohio, and are herded for a season or two on the rich prairies of the west. During the winter months they are fed on hay and Indian corn, cut up with the stem and foliage before the grain has become hard, and placed upright in moderate sized shocks; it dries without mouldiness, and makes one of the most succulent and nutricious articles of food for cattle. In Ohio, thousands of acres are cultivated for this express purpose.—[American Journal of Science.]

Veterinary Practice.—An operation of an unusual description, and attended with great success, was lately performed by our townsman, Mr. J. Barrett, veterinary surgeon, on a valuable cow belonging to Robert Winslow, Esq., of Wilton, Somerset. The removal of the submaxillary sparrotted gland, commonly called wen, which had been increasing in size beneath the lower jaw, for the two past years, and for the last two months appeared to endanger the life of the animal from suffocation and starvation, occasioned by its extreme pressure on the windpipe. The incision that was necessarily made on the part measured 12 inches: and an arduous dissection was then necessary on account of the adhesion of the glands, and the nicest precision was required in separating the inferior maxillary ar-

tery, as well as the jugular vein; but the hæmorrhage was inconsiderable. The relief afforded the animal was instantly apparent, and truly gratifying to those who saw the operation. The animal is now quite well, and much improved in condition and appearance. The gland weighed 5 pounds. The improvements daily making in veterinary practice must be highly satisfactory to gentlemen possessing valuable animals; and the advancement of this branch of science, which has been so many years neglected and left in unskilful hands, promises very desirable benefits to society.

Methods of protecting thatched roofs from fire.—In the vicinity of Toulouse, thatched roofs are coated over with clay mortar, made up with a small proportion of quicklime, sharp sand, and horse dung balls. This coating resists the heaviest rain, and effectually prevents the communication of fire.

2d. In some parts of Russia, the thatch is laid on in two thicknesses—the first, of long straw, is made seven or eight inches thick, and fixed to the laths in the usual way; it is then well soaked with clay, made into the consistence of cream, until it has taken in as much as it will hold. A second coat of straw is then put on without being tied, but it is kept in its place for a short time by laying a log on it near the ridge—the second coat is then impregnated with thin clay mortar, and consolidated by beating; when it has become firm and even, the piece of wood is removed, and the ridge is finished in the usual manner.—[Bulletin de la Societe d' Encouragement.]

Mr. Nutt's System of Bee Management. [From a Friend of this distinguished Apiarian.]

It is one of the least interesting pleasures of an editor's duty to record the successful achievement of designs to which he has devoted his helping hand, to place in successful practice and deserved estimation the efforts of inventive genius, to whatever part of the wide fields of research its attention may have been devoted; and multifarious as are the objects which address themselves to his attention, in his varied capacity, as treasurer of scientific improvement and discovery, or dispenser of their benefits, it is ever a source of gratification that those exertions have been requited with merited success.

Since the first promulgation of Mr. Nutt's views, the Mechanics' Magazine has been the vehicle for the publication of his plans, and the furtherance of his designs. That they were possessed of originality and merit was evident, by their requiring neither sophistry nor mystery to impress them on public attention, for they claimed regard more from their simplicity than the extension at which they aimed. The pages of this Journal were alike open to the results of his patient investigation and research, as well as the queries of his opponents, and we are confident that, even to those proficient in ordinary modes of Bee Management, or who adhered with pertinacity to their usual modes, much good was elicited.

To the Mechanics' Magazine Mr. Nutt returns his obligations for the impetus which, through its medium, has been given to his system, the remuneration which he has received for his labors, and the great and extended success which has in every instance attended its introduction.

The system has now become one of facts, which are now sufficiently numerous, not to prove its superiority over all others which have preceded it, but to render its introduction a matter of important, national, economical consideration. To recapitulate individual instances of its success were only to refer to what has been extensively published in this Journal. The superiority of the honey and its chemical characters are based upon the same foundation, and we therefore feel that in taking leave of the subject as a theory, or its success as merely problematical, by placing it upon permanent record, it will only be necessary to give such instances of its established success, as will at once silence the objections of rivalry. An inspection of the exhibition of the varied collections this season, at the National Gallery of Practical Science, in Adelaide street, where it has stood the test of the strictest examination, and has been the subject of much attention and inquiry, will sufficiently prove the correctness of this observation. The results of Mr. Nutt's takings, during the present year, from six colonies, has been seven hundred pounds of honey, averaging from one hundred to one hundred and twenty pounds from each hive; nor has he been alone in these marked proofs of success, as a reference may be made to the Apiaries of the Marquis of Blandford, Delabere House, near Reading; Rev. Thomas Clark, Gedney Hill; John Burman, Esq., Wisbech; and J. D. Salmon, Esq., Stoke Ferry, Norfolk, where the average products have been the same.

Mill for Clover Seed.—Mr. Adam Shinneman, of this vicinity, obtained from a lot of 11¼ acres, cultivated in clover last season, 34 bushels of clean seed. At the present price of the article, in Massillon, his crop would be worth $136.

A mill has been erected lately, by Mr. D. Kehler, a few miles south of this town, for rubbing out and cleaning clover seed. It is very expeditious, and takes out the seed closely, without injuring the grain. Those having a quantity in the straw on hand would find it to their interest to convey it to the mill. The charges, we learn, are trifling for milling.—[Wooster (Ohio) Advocate.]

Rice Porridge.—The following method of cooking rice, more especially for the sick, who may be confined to a vegetable diet, has been found very useful, and less liable to cloy the appetite than some other preparations. We believe it has not yet found its way into any book on cookery.

Take a wine glass full of rice, well picked and washed, and put it into a sauce-pan with a pint of cold water. Boil it one hour or more. Pour it into a bowl, and add a table spoon full of cream (with a little lump of butter for those who desire it), and season it with salt.—[Genesee Farmer.]

Toast and Water.—An infusion of toasted bread in water is one of the most salutary drinks that can be taken by the sick and valetudinary. Dr. Hancock gives his experience in its favor as follows: He cut a large thin slice of bread, toasted it carefully and thoroughly, without burning; put it hot from the fire in a pint of cold water, allowing it to stand a while, and then set it on the fire till it was as hot as tea is generally drank. He found that five or six cups of this water, with or without sugar, were more refreshing, and sooner took off any fatigue or uneasiness, than any strong wine, strong ale, small beer, warmed coffee or tea, (for he had tried them all), or any other liquor he knew of.

Fine Sheep and Hard Times.—A correspondent informs us that the ten wethers, mentioned in the Brighton Report as the finest ever seen there, were of the pure Dishley stock, raised on the farm of Thomas Dunn, Esq. of Albany, whose stock of sheep and swine has long been distinguished for excellence; and were fatted at Meadow-banks, Deerfield. It appears by the Franklin Mercury, printed at Greenfield, Mass. that two hundred dollars had been offered and refused before they started. At Lancaster the owner rejected another offer of one hundred and fifty dollars. At Brighton the highest bid was one hundred and twenty-five. This is probably the lot mentioned by the reporter of the Daily Advertiser as "the finest he ever saw."

A pair of white steers owned by Mr. Phineas Page, of Barnardston, were weighed February 25, and their weight including the yoke was found to amount to two thousand two hundred and twenty pounds. They do credit to their feeding.—[Greenfield Mercury.]

To kill Rats or Crows.—Bruise half an ounce nux vomica and soak 24 hours in warm water; then add 4 quarts corn, and soak it 12 hours; then sow the corn on the ground immediately after planting.

Produce at Ithaca.—The following extract is from the speech of the Hon. Charles Humphrey, in the debate on the subject of the Tompkins County Bank.

I will not trespass upon the indulgence of the House, by entering minutely into a detail of the various productions of the surrounding country, which find a market at Ithaca. As some of the leading articles besides lumber, I may mention between three and four hundred thousand dollars worth of wheat and flour, between three and four hundred tons of butter, large quantities of pork, coarse grains, &c. which were exported by way of the Erie canal the last year. And notwithstanding the exports, from seven hundred to a thousand laborers, in addition to the ordinary inhabitants of the county, many of them with families, were supplied during the same period with provisions at this market; and large quantities were transported to the south and east by land carriage. I also find among my statements, derived from sources entirely to be relied upon, live stock sent from the country to more than $150,000 in value; cotton and woollen goods to more than $100,000; between 2 and 300 tons of ashes; and several hundred tons of whiskey. The Lord only knows where this last article came from—we claim no credit for having manufactured it. There were from seventy to one hundred canal boats employed in the commerce of the county for the last year, of the average value of $500 each. *Without going more into particulars, the exports are known to have exceeded one million five hundred thousand dollars; and the imports more than one million of dollars in value.* And I am authorized, from authority that admits of no doubt, to say that the commerce of the county of Tompkins pays at least *one-tenth of all the tolls received upon the Erie canal*, besides what finds an outlet through the Seneca Lake. Part of the town of Hector, embracing a coast upon the Seneca Lake of about ten miles, a densely populated, fertile and delightful country, sends its produce and receives much of its imports through that Lake, and pays its tolls at the Geneva Office.

The village of Ithaca is compactly built, mostly inhabited by respectable and thriving mechanics; and almost all the various articles required by the surrounding country are there manufactured. It has several handsome public buildings. As an evidence of its comparative importance, I can state, that on some days of each week, fifteen mails are opened and closed, five daily stages arrive and depart, beside several three times, twice, and once a-week; a steamboat also traverses the Lake daily.

On the Causes of Spontaneous Combustion. By J. A. B. [From the Journal of the Franklin Institute.]

I wish, through the medium of your Journal, to solicit the attention of some of your scientific readers to the causes of spontaneous combustion, generally; and with a view particularly to the investigation of those causes that are liable to produce it in cotton, woollen, and paper factories, from the stock, or waste, being accidentally impregnated with oils, or other substances.

As very few manufacturers are sufficiently acquainted with chemistry to determine accurately the causes of the effects which they may observe, it is therefore desirable that men of science, who have leisure, inclination, and information, (our correspondent has forgotten an important item, viz. *means*,) adequate to the task, should undertake and perforn a series of experiments on the intermixture, or chemical combination, of different materials, together with the proportions, situations, degrees of heat, &c., requisite, in each case, to produce spontaneous combustion, and that publicity should be given to the same through the pages of this Journal.

The vast amount of capital invested in various kinds of manufactures, and the large number of mechanics and workmen of every grade and description, who are interested, either directly or indirectly, in the safety and prosperity of our factories, whose daily support and almost sole means of accumulating property are derived from their employment therein, all unite in the requisition.

It is confidently believed that many buildings have been destroyed by fire, originating in spontaneous combustion, and that there is frequently great danger, where it is least suspected.

To aid in the inquiry, agents and superintendents, as well as the observers in the several departments of factories, should unite in communicating such cases as may have come within their notice, together with such facts and circumstances as attended them.

To contribute my mite, I will give an account of the few instances that are within my knowledge, although my statements cannot be as detailed as I could wish, from my not having paid much attention to the subject at the time the observations were made.

The first instance of spontaneous combustion, or that which was apparently so, and was not otherwise accounted for, was in a quantity of wood ashes.

The ashes were in the body of an old waggon, with boards above, at the sides and ends, and had been accumulating for more than two years, to the amount of fifty bushels, or more. The ashes belonged to a very careful man, if the epithet is not altogether inapplicable to a person who would deposit ashes in a wooden vessel, whose constant custom was to have his ashes taken up from the hearth in a metallic vessel, and stand therein until entirely cold, before they were put into the usual place of deposit, and no danger was apprehended from this practice.

One evening about sunset, smoke was perceived to issue from the body of ashes, and it was first supposed that one of the domestics had, contrary to strict orders, put in some hot embers; but, on inquiry, it did not appear that any ashes had been added for three days, and this appeared the more probable, as several vessels were then found standing full of ashes which had been taken up.

When the fire was discovered, it was expected that it was confined to a small spot only, and that a small quantity of water would be sufficient to extinguish it, but, on pouring water on the mass, the ashes were scattered very extensively, and on further examination it was found that the boards in several places were burnt almost through, and that the whole quantity of ashes was in a state of ignition like embers immediately from the fire. Nothing but a timely discovery prevented the destruction of a large portion of a village, for the buildings were all of wood, and so situated that the chance of saving one out of twenty would have been but very small.

I should be glad to throw some further light on this subject, but every thing else in relation to it was mere conjecture, and whether some oily substance was accidentally intermixed with the ashes, or was introduced by carelessness, or otherwise, or from what cause the combustion was produced, remains entirely unknown.

Instances have been known in which cotton has taken fire by wiping up with it oil that had been spilled, both linseed and sperm oil.

Weavers' harnesses in factories are varnished with a varnish made of the following materials, the same, in greater or less proportions, being used by different manufacturers: the usual ingredients are, linseed oil, spirits of turpentime, litharge, red lead, shellac, umber and India rubber. The composition is boiled down to a thick varnish, or laid on to the harness with a brush. The harness is usually made of cotton twine.

I once knew an instance in which a hank of twine, which was varnished for mending harness, took fire, spontaneously, while hanging to dry.

I mention this circumstance, because in many factories it is customary to varnish and hang the new harness to dry in the garret, or some other spare room of the mill, and likewise to lay away the old worn-out harness in the same place, and with very little caution as to the quantity that comes in contact: a practice that may lead to dangerous and destructive consequences.

I hope my remarks will not be considered irrelevant. It will readily be perceived that my object is, at this time, more to obtain than to communicate useful information.

Pittsfield, N. H., December 2, 1833.

MECHANICS' WIVES.—Speaking of the middle ranks of life, a good writer observes:

"There we behold woman in all her glory: not a doll to carry silks and jewels, not a poppet to be flattered by profane adoration, reverenced to-day, discarded to-morrow; always jostled out of the place which nature and society would assign her, by sensuality or by contempt; admired, but not respected; desired, but not esteemed; ruling by passion, not affection; imparting her weakness, not her constancy, to the sex she would exalt; the source and mirror of vanity. We see her as a wife partaking the cares and cheering the anxiety of a husband, dividing his toils by her domestic diligence, spreading cheerfulness around her; for his sake sharing the decent refinements of the world, without being vain of them; placing all her joys and her happiness in the man she loves. As a mother, we find her the affectionate, the ardent instructress of the children whom she has tended from their infancy; training them up to thought and virtue, to piety and benevolence; addressing them as rational beings; and preparing them to become men and women in turn. Mechanics' daughters make the best wives in the world."

STEAM-CARRIAGES ON COMMON ROADS.—In the December number of the Repertory of Patent Inventions, we find the following account of the performance of a steam-carriage on common roads, which is deemed by many to be conclusive evidence of their ultimate success.

Steam-Carriages on Common Roads; with a Notice of the Journey to Stoney Stratford.

We are not disappointed in the expectations we hold out, that "steam-carriages might soon be expected on our common roads," a company being now formed for improving the roads, and running steam-carriages between London, Birmingham, Liverpool, and Holyhead: to be called the "London, Holyhead, and Liverpool Steam-Coach and Road Company," Consulting Engineer, Thomas Telford, Esq., Acting Engineer, John Macneill, Esquire.

From the moment that Sir Charles Dance introduced his carriage to Messrs. Maudslay and Field—and those gentlemen saw enough to induce them to undertake to make repairs and changes in the practical details—we were satisfied that the day was not far distant when this description of conveyance would become general; and it only required that the old carriage should be vamped up sufficiently to perform a journey of some extent, carrying such parties as could duly appreciate the performance; and who, from their practical experience, would judge whether sufficient had been done to justify them in lending their characters in the future advancement of this important project. The Brighton journey, from the admirable manner in which it was performed, naturally turned the attention of scientific men to the subject; and the regular running of the carriage between London and Greenwich for eight successive days (Sundays excepted), added to the general feeling, that enough had been accomplished to warrant that more decided steps should be taken to advance the introduction of steam conveyance on our common roads. Hence it was proposed by a number of influential individuals, that a further trial should be made of the engine, with a view to forming a company between London and Holyhead, should Mr. Telford and other engineers be of opinion that the application of steam on common roads had become practicable; and a proposition was made to Sir Charles Dance, that his steam-coach should run to Birmingham. We have already expressed our opinion that the carriage had performed more than could have been expected, from the inequality of many of its parts; and it would probably (as far as the public opinion was concerned) have been desirable not again to have put the carriage on the road; this was the opinion of many, particularly of Sir Charles Dance himself. The liberal manner however in which Mr. Telford and other engineers and scientific men had taken up the matter, and had tendered their talent to bring the carriage before the public, at once induced Sir Charles to give his approbation to the journey, more particularly as the engineers gave it as their opinion, that although they might not arrive at Birmingham, owing to the state of the carriage, together with the badness of some parts of the roads, they would be equally

well able to form a decided opinion from what the present carriage was capable of performing, as to what more might be expected from a new carriage built by practical workmen, and with due attention to the proper distribution of strength. The question to be decided was, whether the principle was good; if, after a fair trial, the answer should be in the affirmative, then there would be no doubt that, placed in practical hands, engines would be produced capable of performing with as much certainty as any other means of conveyance, and with an increased degree of speed and safety: on the other hand, should the opinion prove unfavorable, and the principle be considered defective, this knowledge must have determined Sir Charles Dance on abandoning all further attempts to realize his great undertaking. Having given these introductory remarks, we cannot but express our pleasure in recording the liberal manner in which the engineers and other scientific men have come forward to advance so great a national undertaking, and by their characters and talent have given weight to the cause in which Sir Charles has so long, so arduously, and we may now add, so successfully labored. We are happy in being able thus to state, that the question of the practicability of steam conveyance on our present roads is now set at rest; because we are aware that many and various reports have gone abroad with respect to the Birmingham trip; but we doubt not that the results which we have given will show, that what was performed on that day convinced all parties present that enough had been done.

We will conclude our notice of this subject, by giving a few particulars of the journey of the steam carriage from London to Stoney Stratford, taken from the note book of one of the gentlemen present. "On Friday, the first of November, 1833, Sir Charles Dance's steam carriage started from Gray's Inn Road, at about twenty minutes after three o'clock, A. M., passing through Highgate Archway, arrived at the Wellington (between five and six miles) in thirty-three minutes, the road being on the rise all the way. At this place coke and water were taken in. When again about to start, it was discovered that the weld at the joint of one of the tubes had given way, and that the water was flowing copiously; the carriage was run into the yard, and the fire put out, in order to repair the defect. Mr. Field, on examination, directed the man to cut out the defective part, and plug the ends; this was a work of time, owing to the want of tools. The object however was accomplished, and after four hours' delay the fire was again lighted, and the carriage once more took the road, and without further accident arrived at Stoney Stratford, fifty-two miles; at which place it was determined to dine and stay the night, and proceed forward next day to Birmingham. In the morning, on lighting the fire, it was discovered that the pipe was still defective, and would require to be removed that good joints might be made; this must necessarily cause delay. On a conversation of the parties it was generally agreed, *that the practicability and economy of employing steam carriages as a means of transport for passengers on turnpike roads was fully established.* The carriage remained at Stoney Stratford on Sunday, and was to have returned to town on Monday; but there being a meeting of magistrates and commissioners of public works on that day, who expressed a desire of seeing the performance of the carriage, it was determined to delay the return till Tuesday, on which day it came to town, a distance of fifty-two miles, in four hours and forty-five minutes, even with the bad state of the roads.

"We have with pleasure spoken of the liberality of one party of individuals, we cannot pass over in silence the illiberality of others. Immediately on its being determined that the steam carriage should go to Birmingham, Mr. Macneill (one of the engineers of the Holyhead roads), assisted by Mr. Gordon, undertook to make arrangements for supplies of coke and water at proper distances; by this means it soon became generally known that the carriage was expected; and in addition to the already bad state of this portion of the roads (the St. Alban's trust), soft gravel to the depth of ten inches was laid over many parts, with a view to stop the carriage; but we leave this disgraceful conduct to receive its proper notice in the annual report to government of the commissioners and engineers of the roads. With the exception of this trust, the most liberal feeling was displayed by all parties and every facility afforded."

One of the principal roads having thus been taken up, and countenanced by some of our most celebrated engineers, leaves no doubt that attention will soon be called to other roads. An important benefit attending improving the present roads is, that the course of the traffic will remain unaltered; and thus the immense interests embraced on the "road sides," throughout the country, will retain and perhaps increase their value.

The subject of road making becoming thus a matter of the greatest importance, we hope to be able to give some particulars of the improvements which have been judiciously made on the Holyhead road; and we shall be happy to receive any information on this subject from our correspondents; for we are anxious to see every possible improvement introduced in our means of conveyance, whether on canals, railways, or common roads; we are advocates for all, for each means has its advantages; and we do not hesitate to say, that England is as much indebted for her prosperity to the facility of conveying her produce, as to any part of her economy.

Since writing the above, we have been favored with a copy of the report of the engineers who accompanied the carriage, which we subjoin.

Report of the Result of an Experimental Journey upon the Mail-Coach Line of the Holyhead Road, in Lieutenant Colonel Sir Charles Dance's Steam Carriage, on the 1st November, 1833.

Public attention having been attracted to the practicability of travelling with locomotive engines upon ordinary turnpike roads, by a report of a Committee of the House of Commons, of the 12th of October, 1831, stating that, in the opinion of the committee, the practicability of such mode of travelling had been fully established; and more recently by a report of a journey to and from Brighton having been successfully performed by Lieutenant Colonel Sir Charles Dance's steam carriage, as well as by the fact that the same carriage was daily in use between London and Greenwich, conveying numerous passengers through the crowded suburbs of the metropolis without the slightest inconvenience to the public, we were desirous of personally making an experiment of the facility with which a carriage of that description could perform a journey of considerable length; and having selected the mail coach line of the Holyhead road for the purpose of such experiment, we made an arrangement with Sir Charles Dance for the use of his Carriage, on Friday, the 1st inst.

*The weight of the carriage, with the water, coke, and three persons upon it, was about	-	-	3 tons, 5 cwt.
The weight of the omnibus coach attached to it	-	1 "	0 "
The weight of the passengers, their luggage, and some additional sacks of coke, about		1 "	15 "
Making the gross weight moved,		6 tons,	0 cwt.

The motive power was an engine with two cylinders, seven inches in diameter and sixteen inches stroke. The pressure of steam on the tubes constituting the boiler, or generator, was not allowed to exceed 100 lbs. per square inch.

Before the carriage had proceeded six miles, one of the tubes of which Sir Charles Dance's boiler is composed was found to leak so fast as to render repair absolutely necessary: it was also apparent, that the size of the engine was not sufficient to carry so great a weight along a heavy road at any high velocity.

The weather was by no means favorable, there having been much rain in the course of the night and morning, so as to make the road heavy, added to which the winter coating of new materials had, in many places, been laid upon the road. Notwithstanding these obstacles, upon our arrival at Stoney Stratford, 52½ miles from town, it was found by Messrs. Macneill and Carpmael, who had taken accurate minutes of the loss of time occasioned by stoppages, that the average rate of travelling had been seven miles per hour.

Thus there can be no doubt, that with a well constructed engine of greater power, a steam carriage conveyance between London and Birmingham, at a velocity unattainable by horses, and limited only by safety, might be maintained; and it is our conviction that such a project might be undertaken with great advantage to the public, more particularly if, as might obviously be the case, without interfering with the general use of the road, a portion of it were to be prepared and kept in a state most suitable for travelling in locomotive steam carriages.

Thomas Telford, President of the Society of Civil Engineers.
John Rickman, Secretary and Commissioner of Highland Roads and Bridges.
C. W. Pasley, Lieut. Col. Commanding the Royal Engineers, Chatham.
Bryan Donkin, Civil Engineer.
Timothy Bramah, Civil Engineer.
John Thomas, Civil Engineer.
Joshua Field, Civil Engineer.
John Macneill, Engineer to the Holyhead Roads.
Alex. Gordon, Civil Engineer.
Wm. Carpmael, Civil Engineer.
J. Simpson, Engineer to the Chelsea Water-Works.

London, November, 1833.

* These facts have been ascertained by Mr. Joshua Field, Mr. John Macneill, and Mr. Alexander Gordon, civil engineers.

GRANT THORBURN, Esq. the celebrated seedsman of New-York, the Lawrie Todd of Galt's novel of that name, arrived in London from New-York in the last week of October, and, after remaining a few weeks, will proceed to Scotland to visit his father (who is still alive, and ninety-two years of age), in the neighborhood of Dalkeith. Mr. Thorburn proposes to return to London in February, and to embark again for America in March, taking with him an extensive assortment of trees, plants, and seeds. Mr. Thorburn assures us that he has seen no seed or plant establishment in or about London, not even excepting Chubb's splendid shop in Newgate street, or the Bedford conservatories, at all to be compared to his own store in New-York. Mr. Thorburn has also brought with him his auto-biography, with the intention of publishing it in London.—[Loudon's Magazine, Dec. 1833.]

A PUBLIC CEMETERY has recently been proposed for Manchester and its vicinity. By a prospectus which has been sent us, it appears that the capital is to be raised in shares of ten pounds each. We wish the scheme success, and hope a sufficiently extensive piece of ground will be purchased, and that it will be laid out in an appropriate style. We say appropriate, because we have never yet seen a British cemetery appropriately laid out. The best is Liverpool, because the artist had only to follow the accidental features of the spot. In general, the great fault is the employment of curved lines in the walks, which renders the cemetery like a pleasure ground, instead of giving it a distinctive character. In our forthcoming Encyclopædia of Landscape Gardening we shall have a good deal to say on this subject.—[Loudon.]

FOREIGN GRAPES.—We have never seen foreign grapes, whether from the continent or Portugal, in greater abundance, of better quality, or cheaper, than they are this season. Nothing can exceed the size and beauty of the Hamburgh or Frankenthal grapes, brought from Holland, and sold in London from 1s. to 1s. 6d. a pound. Arriving in less than 24 hours by the steam packets, they have all the plumpness and bloom of fresh gathered fruit. The black Portugal grapes also arrive in little more than a week by means of the steam packets; and though part of the bloom and freshness of appearance of their berries is lost, yet for eating, though not for show, they are uninjured. Were there a proper demand for eating grapes from Portugal, the Muscats and Frontignacs would doubtless be cultivated there, when the poor man in this country would be able to have on his table as good grapes as the richest. The same may be said as to the pine apple, which doubtless might be cultivated in Portugal at far less expense than in England, and steam would soon transport them to the remotest parts of Britain, nay, of Europe. After a few more years of struggling, French wines will be as cheap in England as in France. Thus, then, the tendency of all things is to equalization, and those who now produce every thing will ultimately also enjoy every thing.—[Loudon, Dec. 1833.]

BEES are particularly fond of the flowers of the snowberry bush (Symphoria racemosa, Ph.): so I find, and I would, in consequence, recommend that numerous plants of this shrub be planted near to apiaries.

CARACCAS WHEAT.—Of the wheat of the neighborhood of Victoria, a village in the province of Caraccas, which Humboldt, in his personal narrative, p. 104–107, has noticed as being very productive, and as ripening in Victoria in 70 or 75 days from the sowing, Dr. Hamilton, 15 Oxford Place, Plymouth, has received seeds from Sir R. K. Porter, and distributed them in small quantities to various individuals in Britain. He has sent us 125 grains, which we have placed in hands that will properly apply them, and eventually, we trust, enable us to communicate the result. We are, however, altogether doubtful of "its coming to maturity" in this climate, "in the singularly short space of time spoken of by Humboldt;" and as the grains "appear smaller, and of a darker color," than those of our own wheats, we scarcely at all participate in Dr. Hamilton's sanguine expectations respecting it; still, this is no reason why every experiment should not be tried. Dr. Hamilton, after soaking two grains for twenty-four hours in a solution of oxalic acid, sowed them on August 26, and on August 29 he wrote—"They are now above ground, in a pot in one of my windows, and I am in the hope of their perfecting their crop in November." Dr. Hamilton conceives the possibility of three crops in a year being attained, "even in this cold country, in favorable seasons and situations."—[Gardener's Mag.]

EXTRACT OF SUMAC.—This substance is prepared in Sicily, and is used for dying and tanning skins. It occupies the one-hundredth part of the volume of common sumac. It is dissolved in tepid water.

ANIMALS IN WINTER.—There is no subject more engaging to the student of nature, than that which relates to the hibernation of various animals of our latitude. The racoon and woodchuck, who lay up food for their winter stock, hibernate in dens among the rocks, and in deep burrows below frost. The former, it is true, sometimes in February, taking advantage of a thaw and a short time of warm weather, sallies forth from his winter quarters for a night or two, although never in pursuit of food; but the latter is awakened from his repose only by the return of warm weather. I am credibly informed that the late Col. Jeremiah Wadsworth, of Hartford, with a view of experiment, procured a young woodchuck to be petted in the house. Upon the approach of winter, the animal, impelled by instinct, took up his abode for hibernation behind a row of casks in the cellar—not by burrowing in the ground, but by making for himself a small excavation on the surface, in which he planted himself in a circular form, a position the most accommodating to his condition. Many times during the winter, Col. W., to gratify the curiosity of his friends, directed the woodchuck to be brought up. The torpid animal, after lying fifteen or twenty minutes on the carpet before a cheering fire in the sitting room, would begin to yawn, then stretch out one limb after another, open its eyes, slowly raise itself on its feet, and walk rather awkwardly from the immediate influence of the fire, appearing very weary till returned to bed in the cellar, uniformly refusing nourishment of any kind during the time of its hibernation.—[American Journal of Science.]

FRENCH METHOD OF TRANSPLANTING.—During dry weather the gardeners of Paris do not wait for rain, as ours generally do; but, as soon as their crops require removing, it is done in the following manner: Having chosen the spot, they well water the top, and immediately dig it under, and afterwards water the fresh surface, and as soon as it is dry enough, it is raked, and the plants put in without any regard to the mid-day sun; they continue to water the bed three or four times a-day, until the plants have taken root. It is surprising how soon lettuces, cabbages, &c. will be well rooted by such treatment, and with what vigor they grow after the first shower of rain. What would have been the state of such plants had they remained in the seed bed? They would have drawn each other; their first leaves would have dropped off, and general debility would have followed, not easy to be removed: but, by the French treatment, not a leaf will be lost. Now, if we consider the principle, it is simply this: that every plant placed in the sun in water will in no way flag, and the continued wet state of the bed for the first few days is similar to it; besides, the presence of the sun contributes powerfully to the rooting of the plants.

AN IMPROVEMENT IN THE MODE OF RAISING ANNUAL FLOWERS—After sowing the patch of seeds, and covering it with fine moist soil, place a garden-pot inversely over it, until the seeds have struck root; then raise the pot two or three inches, keeping it thus supported for a few days, and then remove it entirely. The pot not only keeps the soil moist, but by the sun heating the pot, the seeds come up much more quickly than otherwise they would do, in consequence of which the seeds need not be sown so early by a fortnight or upwards. The young plants are therefore less exposed to injury from cold or severe spring frosts. Hollow tiles, instead of pots, answer equally well, except that, where mice are, they have access to the ends.—[Gardener's Mag.]

NURSERY FROM SUCKERS.—I have recently split off sprouts or suckers from the trunks of old trees, at the ground, having but a very few small fibres only, on one side of them, some of the stocks being of a large size, for setting as nursery trees. I have them, now in a very thrifty state, grafted and producing very fine fruit. I have two small nurseries; one of about one thousand trees, set on light soil; have never been manured; but have been kept well hoed. These trees are all grafted or inoculated. This nursery has been extolled for its beautiful and thrifty appearance; but has been much shocked by the late severe winters. These trees were all sprouts taken from the trunks of old trees at the ground, when small; most were from four to twelve inches long; some few were more, and split off with an ax or some other tool; they were split off from under the surface of the ground, with, perhaps, a little of the bark of the old tree, forming a bulb, with generally a very small portion of fibres on one side, often next to none: twenty, thirty, to forty, have been taken from one tree; and I have no recollection of ever knowing one to die. A few of those trees have produced handsome fruit. They exhibit no dwarfish appearance. Several have been set out from this nursery; they appear as handsomely rooted as any trees whatever; and I can-

not but recommend this method as the safest, quickest, and cheapest method for a farmer to rear his own apple and peach trees.

Internal Improvements, No. IV. By F. To the Editor of the American Railroad Journal and Advocate of Internal Improvements.

Sir,—Before taking leave of the subject of turnpike roads, we must intreat your further indulgence for a few moments, to make a brief reply and offer a few remarks in relation to an objection that has been frequently advanced against the indiscriminate adoption of M'Adam's system of construction. It may be true, as has been stated, that there are spots highly favored in themselves as to natural advantages,—rich in every mineral and agricultural resource—but at the same time so sequestered and shut out beyond the pale of intercourse with more populous parts of the country, as to render them unavailable, except to a very limited extent. Capitalists, however, cannot be induced to embark in projects that offer but little promise of profit, and that little uncertain and remote. They require something more tangible, and will not seek in distant quarters for that which they may have without seeking at home; and it therefore stands to reason, that so long as safer and more advantageous investments are to be met with here by greater facilities, such places, however strong their claim to notice may be, must of necessity remain in a state of crude, uncultivated nature, or be content with such modifications of approved plans as may be in some degree commensurate with their available means.

We are no friends to the forcing system, and would at any time use our best efforts to discourage any project having a tendency to that end; but, we still think that some substitute might be safely recommended to meet such cases as those alluded to above, without in any manner compromising the great end of Internal Improvements, which is to bring out to the best advantage the resources of a country by any means that the nature and extent of those resources will justify. If a substitute be adopted, it should combine in its qualifications a hard and even surface, with great cheapness of construction. These are qualities indispensably necessary to the furtherance of the end in view—and as they seem to be embodied in a plan recently proposed by an engineer of some eminence in Ohio, we shall content ourselves in referring to a former number of this journal for a full explanation of its principles, by observing that much depends upon the quality and seasoning of the timber used in the formation of the ways. Evaporation principally takes place in the direction of the fibres of the wood; and the juxtaposition of the parts where green timber is used must therefore prevent the whole escape of the natural juices. Decay, under these circumstances, is soon engendered, and the durability of the road thereby materially affected. The originality and real merit of the plan, however, recommend it warmly to notice; and, as applicable to the cases alluded to above, where preliminary measures are necessary to the introduction of more perfect means, it is particularly deserving of attention. For the end ever to be kept in view in the introduction of all improvements and innovations, should be the best interest of the particular section of country through which it may pass; and to this effect such measures only should be adopted as a calm and deliberate examination of its condition, with a careful investigation of its capacity of improvement, may dictate as most conducive to the speedy development of its natural resources. It will be admitted that every district possesses certain capabilities, which are only prevented from being brought into action by its distance from some sea-port town; and that every place having a tendency to increase its facilities of intercourse therewith must exercise a corresponding influence on the improvement of its condition. It is still, however, of vital importance to the early and successful establishmen of prosperity, that the infantine exertions of such district be carefully fostered and guarded against all undue encroachments—thus, an avenue being laid open, no further apprehension need be entertained. A change of condition will soon be manifested by increased activity and prosperity; and its necessities will thenceforth be promptly met by additional facilities: for, as the motive that first incites to action stimulates with greater force to perseverance, so the enjoyment of increased prosperity animates to still greater exertions for its consummation.

As civilization attains a higher degree of perfection, and commerce becomes more generally extended, the luxuries and comforts of life demand the adoption of some new mode of communication more suitable to the advanced state of the arts and manufactures. Railroads and canals thence took their rise; and all countries to which ancient history directs our attention, seem to have availed of them according as necessity has dictated or circumstances justified. Indeed, it is a remarkable fact, that the only countries which have never emerged from their primitive state of barbarism and ignorance are those which are destitute of the means of inland navigation. This is strikingly exemplified in the inland parts of Africa, and in that part of Asia lying north of the Euxine and Caspian—the ancient Scythia and the modern Tartary and Siberia. On the other hand, wherever these means have been enjoyed, there civilization has prospered, and the arts and sciences have flourished. Thus, Egypt was the birthplace of agriculture and manufactures—the banks of the Nile were the sites of its towns and villages, which, together with those of the ancient Indians and Chinese, derived their prosperous condition and immense wealth almost exclusively from their inland navigation.

The experience of past ages therefore proves to us that every means, having for its end the promotion of internal commerce, is deserving the consideration of all civilized communities, and particularly of one like our own, in the enjoyment of every variety of soil and clime, and capable of every species of production, either of agriculture or manufactures. The system of society is so complex in its character, and its various orders so mutually interwoven by natural causes, that a good effect cannot be produced in any one part without exercising a corresponding happy influence over the other; generating thereby a mutual dependance among all classes—the high, the low—the rich, the poor—the agriculturist, the manufacturer. The interests of each converge towards the same point; and it should, therefore, be the duty of each, collectively and individually, to concentrate their energies, and unite their efforts, to the accomplishment of the same great end. Once establish a mutual interchange of the different products of industry, by facilitating the means of intercourse between distant places, and the very objects of that industry thence become more varied, and the general commerce of the country less liable to interruption from the effects of artificial causes; and the action of any particular calamity, to which every society in its social character is more or less exposed, would thence produce but a temporary and partial evil, and would find its own correction in the reaction produced by a continuation of the exciting cause.

These remarks will not, of course, apply to a country exclusively possessing agricultural industry. In such country, the influence of foreign competition on its peculiar staples exercises a direct tendency to stimulate production to an extent that is calculated to overstock and glut the market. The price of the article thence becomes insufficient to meet the expense of raising it; and the cultivator, as a consequence, unless speedily relieved by the introduction either of new staples or new markets of consumption, must sooner or later sink under the pressure, and be reduced to the lowest state of poverty. A most deplorable instance of this truth has already been experienced in some of the Southern States of this Union—where the very articles that, for many years, proved a fertile source of revenue to the cultivator, became, not long since, owing to an excessive production, so reduced in value as to be altogether inadequate to the task of maintaining him above actual want.

But, however palpable the causes by which these effects are produced may appear, it is still a prolific source of speculation among philanthropists how far the rapid extension of manufactures, through the medium of machinery and internal improvements, is advantageous to a country as regards it moral and social condition. It has been observed, and cannot be denied, that every improvement in machinery, by which manual labor is materially lessened, is calculated to produce distress with a certain class of the community, by depriving them of their usual means of employment, and obliging them thereby to recommence the world, so to speak, in the adoption of some new vocation. But, at the same time, it must be remembered that the direct tendency of the operation of any improvement of this kind, is to increase the consumption of the product of its labors by lessening its nominal value. A wider field is thus at once opened to enterprise—additional resources made attainable,—and, therefore, while the evil complained of is only temporary, and confined to a limited, a very insignificant, numerical portion of that community, the benefit conferred is permanent and diffused throughout the whole mass of society. Besides, what tends more to elevate the condition of the poor—to exalt and ennoble the character of man—than the encouragement of all such means as will supersede the necessity for application of mere animal force? It is the degrading tendency of his occupation which alone reduces the poor operator to the lowest grade of human depravity—hardens his conscience—and stifles in his breast every natural feeling of moral excellence. Relieve his mind from this sense of degradation, and his ambition will soon take a loftier flight. He will feel a superiority over the brute creation that will elevate him above his former sphere and urge him on to greater efforts. The faculties of mind thus awakened will be thenceforth directed to the accomplishment of those means of luxury and enjoyment that before were only attainable at unceasing toil and labor.

It is unnecessary to pursue this subject further; for it is obvious that every improvement in machinery must be attended by results highly beneficial to the community at large; and internal communications, as a step preliminary to their introduction and application, should engage a large share of attention from every well wisher to his country. Let every channel, therefore, through which information on the subject can be derived, be opened to public inspection; let its sources be examined with a view to the general good; and let its stream flow pure and unadulterated by the poison which has hitherto polluted it, and we then hazard nothing in the assertion that, under its genial influence, the arts of peace will be cherished and commercial reciprocities cultivated.

F.

New-York, February 8, 1834.

To restore Tainted Beef.—In the last fall I procured an acquaintance of mine in the country to put up a barrel of fat beef for my family's use during the winter. The barrel of beef was sent to me agreeable to contract; but before I had used one quarter part of it I observed it tainted, and so much so as to smell quite offensive. The beef being very fat and fine I was loth to throw it away. I made the following experiment: I procured a half bushel of charcoal, and after taking out the beef and throwing away the offensive pickle, I re-packed it in the barrel, laying the pieces of charcoal between the pieces; and making a new pickle, and adding a little saltpetre, I covered the beef, and in about six days found it as sweet and good as it was when first put up.

SOCIETY PREMIUMS.—The practice of giving spoons and similar articles, spoken of by Loudon, in the following article, has long been followed by the New-York Horticultural Society. On former occasions we have recommended valuable works, handsomely bound.

We are happy to find that an increased attention is paid generally to the gardens of cottagers. The emulation excited by the prizes given to this class can hardly fail in producing the happiest results. We have already mentioned the practice of giving silver spoons, clocks, &c., instead of medals, as one which we highly approved of; but we cannot say so much in favor of a practice which we see has been adopted in some places, viz. that of giving as prizes, shoes, coats, and other articles of clothing. The spoons, clocks, &c. are articles of luxury, which may descend, like heir-looms, from father to son, and may be possessed by any individual without his feeling any degradation in the idea that they have been given to him. He knows that even dukes and princes are proud of the prize cups which they have won for horse-racing, fine cattle, &c., and he looks upon his spoons in the same light. Articles of clothing, however, convey quite a different feeling. The poor man knows that no one would presume to offer them to men of either rank or wealth, and, instead of signs of triumph, they become badges of poverty and degradation. Prizes of books, especially to young gardeners, we cannot but highly approve of; but, to give them the character of a prize, they ought to be handsomely bound, and to have some distinctive mark impressed on the back above the name, such as the words PRIZE VOLUME, or some other device. We are induced to mention this here, from having lately seen some volumes, in boards, given as prizes, without any thing written on them to indicate that they were such.

THE VINE.—Mr. Sidney Weller says, in the American Farmer, that vines, when young, should have the ground kept loose about them, and free from weeds—that they will no more bear neglect in these particulars than corn or other hoed crops.

CLOVER AMONG CORN.—A friend of mine sowed red clover among his corn after going through with the cultivator the last time, the seed was protected from the heat of the sun by the corn, it consequently vegetated very soon, and after the corn was cut off, there was a luxuriant growth of clover, which afforded fine pasture for several successive seasons. The red clover is an excellent manure: I have raised a fine crop of wheat, by ploughing in the second growth after harvest.—[Am. Farmer.]

BLIGHT ON APPLE TREES.—Our apple trees here are greatly injured, and some annually destroyed, by the agency of what seems to be a very feeble insect. We call it, from habit or from some unassigned cause, "the American Blight," *Aphis lanata;* this noxious creature being known in some orchards by the more significant name of "white blight." In the spring of the year a slight hoariness is observed upon the branches of certain species of our orchards. As the season advances this hoariness increases, it becomes cottony, and toward the middle or end of summer, the under sides of some of the branches are invested with a thick downy substance, so long as at times to be sensibly agitated by the air. Upon examining this substance we find that it conceals a multitude of small wingless creatures, which are busily employed in preying upon the limb of the tree beneath. This they are well enabled to do, by means of a beak terminating in a fine bristle: this being insinuated through the bark, and the sappy part of the wood, enables the creature to extract, as with a syringe, the sweet vital liquor that circulates in the plant. This terminating bristle is not observed in every individual: in those that possess it, it is of different lengths; and is usually, when not in use, so closely concealed under the breast of the animal as to be invisible. The alburnum or sap wood being thus wounded, rises up in excrescences and nodes all over the branch, and deforms it; the limb deprived of its nutriment, grows sickly; the leaves turn yellow, and the part perishes. Branch after branch is thus assailed until they all become leafless, *and the tree dies.*

This insect is vivaparous, or produces its young alive, forming a cradle for them by discharging from the extremities of its body a quantity of long cottony matter, which becoming interwoven and entangled, prevents the young from falling to the earth, and completely envelopes the parent and offspring. This languinous vestiture seems to serve likewise as a vehicle for dispersing the animal. The winds wafting about small tufts of this downy matter, convey the creature with it from tree to tree throughout the whole orchard. In the autumn, when this substance is generally long, the winds and rains of the season effectually disperse these insects, and we observe them endeavoring to secrete themselves in the crannies of any neighboring substance.

The first visit of this aphis to us is by no means clear. The epithet of American blight may be correctly applied; but we have no sufficient authority to conclude that we derived this pest from that country. Normandy, and the Netherlands too, have each been supposed to have conferred this evil upon us; but it bids fair to destroy, in progression, most of the oldest and long esteemed fruit from our orchards.

I have very successfully removed this blight from young trees, and from recently attacked places in those more advanced, by an easy application: Melt three ounces of rosin in an earthen pipkin, take it from the fire, and pour into it three ounces of fish oil; the ingredients perfectly unite, and when cold acquire the consistence of honey. A slight degree of heat will liquify it; and in this state paint over every node or infected part in the tree, using a common painter's brush. This I prefer doing in the spring, or as soon as the hoariness appears. The substance soon hardens and forms a varnish, which prevents any escape, and stifles the individuals.—[Journal of a Naturalist.]

LIVE STOCK AT CUMBERLAND FORD.—Extract of a letter to the Editors of the Lexington Observer and Reporter, dated

Cumberland Ford, Ky., Jan. 7, 1834.

SIRS—As some of your many readers may be gratified to know the amount of stock passing this place to market, in the year 1833, I herewith send you the same, to dispose of as you may judge.

Horses,	5337	
Mules,	1247	
	6584—probable value,	$601,560
Hogs, including some few shoats driven with beef cattle,	64,077—	512,578
Stall-fed beef,	915—	36,000
Total value,		$1,150,128

POSTS.—The Shakers at Union Village have been in the habit of making oak posts as durable as locust, by a very simple and easy process. This is merely to bore a hole in that part of the post which will be just at the surface of the earth, with such a slope as will carry it just below the surface, and fill it with salt.

BLOODY MURRAIN.—A farmer in Madison county, Ohio, had lost several of his finest cattle by this disease, and upon opening them he found leeches in their stomachs, much swollen by the blood they had extracted, and it was also found that leeches were living in the water at which the cattle were in the habit of drinking. Believing that this was the cause of the disease he changed the water, and in future only gave them that which was pure; and for three years his stock had not been troubled with that disease. Although this seems to show very conclusively that leeches are the cause of the disease, yet it requires further investigation before the question can be entirely settled.—[Gen. Far.]

VINEGAR IN CREAM.—Sir: The difficulty and labor frequently attending the churning of butter, led me to try a variety of experiments to ascertain if a method could be discovered for making butter come quicker than the usual mode. After trying several things, I found that by adding a table-spoon full of good vinegar to four gallons of cream, when put into the churn, I obtained butter in from seven to eight minutes. If this information will be of any service to your subscribers, you are at liberty to publish it.—[Far. and Mech.]

POTATO BALLS.—A lady of our acquaintance recommends the following preparation:

Mix mashed potatoes with the yolk of an egg—roll them into balls—flour them—or egg and bread crum them—and fry them in clear drippings or lard—or brown them in a Dutch oven.

TO PRESERVE BOOKS.—A few drops of any perfumed oil will secure libraries from the consuming effects of mould and damp. Russian leather, which is perfumed with the tar of the birch tree, never moulders; and merchants suffer large bales of this leather to remain in the London docks, knowing that it cannot sustain any injury from damp. This manner of preserving books with perfumed oil was known to the ancients. The Romans used oil of cedar to preserve valuable MSS. Hence the expression used by Horace, "*Digna cedro,*" meaning any work worthy of being anointed with cedar oil, or, in other words, worthy of being preserved and remembered.—[Greenf. Gaz.]

OBITUARY.—Died, at the Norwich Nursery, on the 4th September last, *Mrs. Sarah Mackie,* aged 59 years. This estimable person was the widow of Mr. William Aram Mackie, and for the last sixteen years has conducted the business of this extensive fruit and forest tree nursery, with the design of preserving the trade and its connections for her rising family. In the performance of this arduous task she was singularly active and exemplary, and her exertions have been for many years attended with great success, though her hopes with regard to the succession of her two elder sons were painfully disappointed. Both were cut off just as they entered the period of manhood. The first (Edward Mackie) perished by an accident, while shooting wildfowl at the mouth of the Tees; and the second (George Mackie) fell a victim to the small-pox, after vaccination. Notwithstanding these bereavements, Mrs. Mackie still continued the business with unabated attention for the benefit of her surviving children, until September last, when she was herself removed, after a very short illness. This nursery is an example of the rapid course of modern improvement, for persons only lately dead could remember the whole extent of the ground and a mile beyond it an entire heath, only used as a sheep walk. Yet this spot, which was taken into cultivation about sixty years ago, has been rendered the centre from which a great part of Norfolk and Suffolk have been supplied with the numerous plantations which have so much improved this district. This change took place through the exertions of Mr. John Mackie, with whom the nursery originated, and from whom it descended, in 1797, to his two sons, William Aram and John Mackie, by whom it was conducted with great spirit and success, until their respective deaths in 1817 and 1818, when it fell into the hands of Mrs. Sarah Mackie, whose death we have now to record. The Norwich Nursery will now be carried on by Mr. Frederick Mackie, the eldest surviving son, who has just added to the former stock the entire collection of succulent plants lately belonging to Mr. Thomas Hitchen, of Norwich, which has been highly esteemed for the great rarity and beauty of the plants of which it consists.—*J. G. Norwich, Nov.* 1, 1833.—[Loudon.]